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KIT 401 : WEB DESIGNING

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1 UNIT

Introduction

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PART-1

Introduction : Basic Principles Involved in Developing a Website, Planning Process.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 1.1. **Discuss the basic principles involved in developing a website.**

Answer

Basic principles involved in developing a website :

1. **Simple is the best :**
   - i. The over-designed website can distract visitors from the main purpose of the website.
   - ii. Clean and fresh design of the website makes the website appealing and helps the user to navigate from one page to another seamlessly.
   - iii. Keep the design simple so that the visitors can feel it easy-to-use and can find their ways easily.
2. **Consistency :**
   - i. Give attention to match design elements throughout each page. The fonts, sizes, headings, sub-headings, and button styles must be the same throughout the website.
   - ii. Plan should be done in advance. Finalize the fonts and the right colors for the texts, buttons, etc., and stick to them throughout the development.
   - iii. CSS (Cascading Style Sheets) is convenient to keep the complete information about design styles and elements.
3. **Typography and readability :**
   - i. Text provides users the desired information. Since search engine crawlers are familiar with this data, it becomes an integral part of SEO (Search Engine Optimization) activities.
   - ii. Typography should be visually appealing and readable for visitors, along with the tricky use of keywords, meta-data, and other SEO-sensitive elements.
   - iii. Use fonts that are easier to read. The modern sans-serif fonts as Arial, Helvetica, etc., can be used for the body texts.

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iv. Make proper combinations of typefaces for each design element such as headlines, body texts, buttons, etc.

4. Mobile compatibility :

i. The web design must be effective for various screens because of the ever-growing usage of smartphones, tablets.

ii. There are a number of web design studios or service points from where we can turn the desktop design into a responsive and adaptive one for all screen sizes.

5. Color palette and imagery :

i. A perfect color combination attracts users while a poor combination can lead to distraction.

ii. Pick a perfect color palette for the website which can create a pleasing atmosphere, thus leaving a good impact on visitors.

iii. Enhance user's experience by selecting a complementary color palette to give a balanced-look to the website design.

iv. Avoid using too many colors. 3 or 4 tones for the whole websites are ample to give an appealing and clear design. Do not use multiple vibrant images.

6. Easy loading :

i. Easy loading can be achieved by optimizing image sizes, combining code into a central CSS or JavaScript file which reduces HTTP requests.

ii. Also we can compress HTML, JavaScript, and CSS for enhanced loading speed.

7. Easy navigation :

i. Visitors stay more time on the websites having easy navigation. So, for effective navigation, create a logical page hierarchy, using bread scrums, and designing clickable buttons.

ii. We should follow the "three-click-rule" so that visitors can get the required information within three clicks.

8. Communication :

i. The purpose of the visitors is to get information, and if the website is able to communicate with visitors efficiently, they would spend more time on website.

ii. To establish effortless communication with the visitors, organize information by making good use of headlines and sub-headlines, cut the waffle, and use bullet points, rather than long gusty sentences.

Que 1.2. Describe in brief the steps used for planning a website.

OR

Describe the planning process for web designing.

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Answer

Steps used for planning a website :

1. **Research and goal setting :**
   - i. Do proper research and set goals before beginning with any project.
   - ii. By setting goals, it will help the website to have a clear direction and purpose.
   - iii. The research has different purposes like it can help to determine what we want and do not want for the website to have.
   - iv. Do some research on the target audience by understanding what our audience wants is crucial to planning the rest of the website.
   - v. Do research on keywords to use with the website.
2. **Planning the site :**
   - i. Planning the website involves creating a wireframe and sitemap. It is kind of skeleton of the site.
   - ii. The sitemap allows the developer to get an outline of what the site will look like, what pages there will be and how they will interact with each other.
   - iii. This helps with planning and is beneficial to the user experience.
   - iv. A user should be able to easily navigate a site, and this begins with the development of the sitemap.
   - v. Before beginning to plan content, a sitemap helps to design what the structure will look like.
   - vi. Once the sitemap is completed, create a wireframe or mock-up. This is visual representations of what the site will look like.
3. **Designing the layout :**
   - i. In this step we have to be creative with pictures, videos and what kinds of things the customer will notice when they come to website.
   - ii. During this step, it is important to keep referring to the target audience.
   - iii. Consider colors, logos that will encourage the audience to interact with the site.
   - iv. It should help the audience to get a feel for our business or product.
4. **Writing the content :**
   - i. The written content of a website is important to its success. It is crucial and deserves a lot of expertise.
   - ii. The written content on a website helps a visitor to determine their next steps.
   - iii. A website should have a vocabulary that the average person can understand.

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iv. Considering the target audience is extremely important, especially when it comes to the text being used to give customers information.

v. Create catchy titles and headlines to draw people.

vi. The content should get customers excited about buying a product or service.

5. **Coding the website :**

i. The coding begins with the homepage and gradually branches out to the other pages included in the site.

ii. The sitemap should be followed to ensure everything is coded correctly.

iii. It is also important to set up frameworks to make sure that everything will fit onto the server during the installation process.

iv. Once the website is laid out according to the sitemap, it should be tested before moving any further.

v. If all works well, then the rest of the content should be added, and formatting should be completed.

vi. This phase involves having a deep understanding of the technology used.

vii. During coding, consider factors such as SEO, CMS plugins, and additional tools that is used for analyzing and testing the website in the future.

6. **Testing and launching :**

i. Before the website is launched, it is crucial that it is tested out by real users.

ii. There is user testing that can be completed to make sure the website is giving users what they need to be successful on the test.

iii. Check the website multiple times. When we are confident that everything is working in order, we can go ahead and launch the website live.

iv. When it comes to launching, we are finally ready and can do this by uploading it to the server. Need FTP (File Transfer Protocol) for this process.

v. It is also important to make sure everything is running smoothly immediately after launching.

7. **Maintenance :**

i. Since technology and products are changing more rapidly than ever before, it is important to stay up-to-date with what is happening on the internet.

ii. Maintaining a website is hard work, but the more effort is put into its maintenance, it becomes the better.

iii. It should constantly be checked out for errors.

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iv. User-experience should be tested often, and it should be ongoing.

v. All content is current. This means that the correct information is on the website such as contact information, pricing, and customer reviews.

vi. Reports can be sent daily or in other time increments to give data and information about how the site is performing.

PART-2

Domains and Hostings, Responsive Web Designing.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 1.3. Write a short note on domain name and web hosting.

Answer

Domain name :

1. A domain is a name that identifies IP addresses on the internet. A domain is the address of the website. It is used to identify web pages.
2. We can register a domain name by registering with a domain name services registrar.
3. Domain name is a string of characters that give the website an identity.
4. Examples of domain name are google.com, alexa.com, linux.org, quantumpage.co.in, etc.
5. All domain names are unique. This means there can be only one google.com in the world. We cannot register a name once it is registered by others (governed by ICANN).

Web hosting :

1. Web hosting is a service that allows organizations and individuals to post a website or web page onto the Internet.
2. A web host, or web hosting service provider, is a business that provides the technologies and services needed for the website or webpage to be viewed in the Internet.
3. Websites are hosted, or stored, on special computers called servers.
4. When Internet users want to view the website, they need to type the website address or domain into their browser. The computer will then connect to the server and the webpages will be delivered to them through the browser.

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Que 1.4. **Discuss responsive web design.**

Answer

1. Responsive web design is the practice of building a website suitable to work on every device and every screen size, no matter how large or small, mobile or desktop.
2. Responsive web design is focused for providing an intuitive and gratifying experience for everyone. Desktop computer and cell phone users alike all benefit from responsive websites.
3. Responsive web design provides an optimal experience, easy reading and easy navigation with a minimum of resizing on different devices such as desktops, mobiles and tabs.
4. Responsive web design uses HTML and CSS to automatically resize, hide, shrink, or enlarge, a website to make it look good on all devices (desktops, tablets, and phones).

PART-3

Types of Websites (Static and Dynamic Websites), Web Standards and W3C Recommendations.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 1.5. **What are the types of websites ?**

Answer

Types of websites :

Static website :

1. In static websites, web pages are returned by the servers which are prebuilt source code files, built using simple languages such as HTML, CSS or JavaScript.
2. There is no processing of content on the server (according to the user) in static websites.
3. Web pages are returned by the server with no change therefore, static websites are fast.
4. There is no interaction with databases. Also, they are less costly as the host does not need to support server-side processing with different languages.

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Dynamic website :

1. In dynamic websites, web pages are returned by the servers which are processed during runtime which means they are not prebuilt web pages but they are built during runtime according to the user's demand with the help of server-side scripting languages such as PHP, Node.js, ASP.NET and many more supported by the server.
2. They are slower than static websites but updates and interaction with databases are possible.

Que 1.6. Differentiate between static websites and dynamic website.

Answer

S. No.	Static website	Dynamic website
1.	Content of web pages cannot be change at runtime.	Content of web pages can be changed.
2.	No interaction with database is possible.	Interaction with database is possible.
3.	It is faster to load as compared to dynamic website.	It is slower than static website.
4.	Lower development costs.	Higher development costs.
5.	No feature of content management system.	Feature of content management system.
6.	HTML, CSS, JavaScript is used for developing the website.	Server side languages such as PHP, Node.js are used.
7.	Same content is delivered every time the page is loaded.	Content may change every time the page is loaded.

Que 1.7. Discuss about web standards and W3C recommendations.

Answer

i. Web standards are rules and guidelines established by the World Wide Web Consortium (W3C) developed to promote consistency in the design code which makes up a web page.

ii. It is the guideline for the mark-up language which determines how a web page displays in a visitor's browser window.

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iii. Advantages to these standards are :

1. Web pages will display in a wide variety of browsers and computers, including new technology like iPhones, iPads, PDA devices, mobile phones, which greatly increases the viewing audience.
2. W3C standards promote the use of Cascading Style Sheets (CSS) or design code which is attached to the web page rather than embedded in the page.
3. The use of style sheets significantly reduces the page file size which means not only a faster page loading time but lower hosting costs for frequently visited sites due to using less bandwidth.
4. Design features such as colors and fonts can be easily changed by just modifying one style sheet instead of editing every individual page in a website, reducing the costs to modify the site.
5. Search engines are able to access and index pages designed to web standards with greater efficiency.

iv. W3C continues to evolve to provide the community a productive environment for creating Web standards. W3C standards :

1. Are created following a consensus-based decision process.
2. Consider aspects of accessibility, privacy, security, and internationalization.
3. Reflect the views of diverse industries and global stakeholders.
4. Balance speed, fairness, public accountability, and quality.
5. Benefit from Royalty-Free patent licensing commitments from participants.
6. Are stable (and W3C seeks to ensure their persistence at the published URI).
7. Benefit from wide review from groups inside and outside W3C.
8. Are downloadable at no cost.
9. Are maintained in a predictable fashion.
10. Are strengthened through interoperability testing.

PART-4

Introduction to HTML : What is HTML, HTML Documents, Basic Structure of an HTML Document.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

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Que 1.8. **What is HTML ?**

Answer

1. HTML (Hypertext Markup Language) is a markup language commonly used to create web pages.
2. A markup language provides a way to describe the structure of text and graphics on a web page.
3. HTML is developed and maintained by World Wide Web consortium (W3C).
4. In HTML, the term hyper signifies the navigation from one location to another in a non-linear fashion.
5. HTML defines the content, *i.e.*, the structure and the layout of a web page with the help of elements and attributes. An element includes the start and end tags, with some content within them, and attributes provide additional information (such as alignment of element on a web page) about the elements.
6. The different versions of HTML are as follows :
   i. HTML 1.0
   ii. HTML 2.0
   iii. HTML 3
   iv. HTML 4
   v. HTML 5

Que 1.9. **Define HTML documents. Give the basic structure of an HTML document.**

Answer

1. An HTML document is created by using elements, attributes and has the .html extension.
2. The very first element of an HTML document is DOCTYPE, which specifies the DTD definition used by the document. DTD refers to a separate file that contains a formal definition of the grammar, such as the supported elements and attributes used to the document, and the version of the markup language in which the document is written.
3. A browser checks the code of the document according to the rules in the <DOCTYPE> declaration.
4. The basic structure of an HTML document :

```
<!DOCTYPE HTML>
<HTML>
<HEAD>
```

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```
<TITLE>
...
</TITLE>
</HEAD>
<BODY>
...
</BODY>
</HTML>
```

5. Basic structure in the following sections :

a. Elements and attributes :

i. Elements are the building blocks of an HTML document. A browser interprets an HTML document on the basis of the elements that are added in the document.

ii. An element provides instruction to a web browser, specifying how to display the HTML document.

iii. Elements are represented by tags that use the <, /, and > symbols.

iv. In the given HTML document, HTML, BODY, HEAD, and TITLE are elements.

v. The document starts with the DOCTYPE element and the HTML code resides in the HTML element. The HTML element has two subelements, HEAD and BODY.

vi. The HEAD element contains another subelement, TITLE, which is used to specify a title of an HTML document.

vii. The BODY element contains the actual content of the document.

viii. Attributes are used to provide additional information about the properties and behaviour of HTML elements.

ix. Most HTML attributes are name-value pairs separated by the equal (=) sign. Attribute values are enclosed within single or double quotes.

x. In HTML, each element consists of the own set of attributes. HTML tags, elements, and attributes are collectively known as HTML markup.

b. Tags :

i. Most HTML elements are represented by an opening tag, <element-name>, and a closing tag, </element-name>.

ii. The opening tags are written within less than (<) and greater than (>) signs.

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iii. The closing tags are written within the <and> signs with a forward slash (/) appended before the name of the tag.

iv. On the basis of opening and closing tags, elements are divided into the following two categories :

1. **Container elements or tags :** These tags contain content or other elements.
2. **Empty elements or tags :** These tags do not contain any content or elements.

c. The DOCTYPE element :

i. The DOCTYPE element provides the Document Type Definition declaration, or called DOCTYPE declaration, for browsers to specify which version of the markup language is used in the HTML document.

ii. This element is used before the <HTML> tag, and does not have a closing tag.

PART-5

Creating an HTML Document, Markup Tags.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 1.10. Write the steps to create an HTML document.

Answer

Steps to create HTML document :

Step 1 : Creating the HTML file :

Open up computer's plain text editor (Notepad) and create a new file.

Step 2 : Type some HTML code :

Start with an empty window and type the following code :

For example :

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>A simple HTML document</title>
</head>
```

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```
<body>
    <p>Hello World!<p>
</body>
</html>
```

Step 3 : Saving the file :

Now save the file on desktop as "myfirstpage.html".

To open the file in a browser. Navigate the file then double click on it. It will open in the default Web browser. If it does not, open your browser and drag the file to it.

Que 1.11. Describe markup tags.

Answer

1. A markup tag is a directive that contains snippet of code with a relative reference to an object in the store such as a variable, URL, image, or block.
2. Markup tags can be used anywhere the editor is available and incorporated into the HTML of email and news letter templates, as well as other types of content.
3. Markup tags are enclosed in double, curly braces, and can either be generated by the Widget tool, or typed directly into HTML content.
4. Rather than hard-coding the full path to a page, we can use a markup tag to represent the store URL.
5. A markup tag is the fundamental characteristic of HTML. Every markup tag is a command placed between a left bracket (<) and a right bracket (>).
6. Markup tags are not revealed by a web browser, they are invisible.
7. In most cases, markup tags (containing commands) come in pairs, with text or a graphic image located between the beginning and ending tags :

   <COMMAND>text or graphic image</COMMAND>
8. It controls or regulates the text or graphic image information between the two non-empty markup tags.
9. Pairs of markup tags are referred to as non-empty tags, because something is contained between the beginning tag and the ending tag.
10. A beginning tag and an ending tag are identical, except a "slash" (/) is placed before the command of the ending tag to tell the browser that the command has been completed.

PART-6

Headings : Paragraphs, Line Breaks.

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Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 1.12. **Discuss headings with its importance.**

Answer

1. A HTML heading or HTML (h) tag can be defined as a title or a subtitle which is displayed on the webpage.
2. When we place the text within the heading tags <h1>.....</h1>, it is displayed on the browser in the bold format and size of the text depends on the number of heading.
3. There are six different HTML headings which are defined with the <h1> to <h6> tags, from highest level h1 (main heading) to the least level h6 (least important heading).
4. h1 is the largest heading tag and h6 is the smallest one. So h1 is used for most important heading and h6 is used for least important heading.

For example :

```
1. <h1>Heading no. 1</h1>
2. <h2>Heading no. 2</h2>
3. <h3>Heading no. 3</h3>
4. <h4>Heading no. 4</h4>
5. <h5>Heading no. 5</h5>
6. <h6>Heading no. 6</h6>
```

Output :

Heading no. 1

Heading no. 2

Heading no. 3

Heading no. 4

Heading no. 5

Heading no. 6

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Importance of headings :

1. HTML headings provide valuable information by highlighting important topics and the structure of the document, so we optimize them to improve user engagement.
2. Do not use headings to make your text look BIG or bold. Use them only for highlighting the heading of the document and to show the document structure.
3. Search engines, such as Google, use headings to index the structure and content of the web pages so use them wisely in webpage.
4. Use the <h1> headings as main headings of your web page, followed by the <h2> headings, then the less important <h3> headings, and so on.

Que 1.13. **Write a short note on paragraphs and line breaks.**

Answer

Paragraph tag :

1. The tag in HTML defines a paragraph. These have both opening and closing tag. So anything mentioned within and is treated as a paragraph.
2. Most browsers read a line as a paragraph even if we do not use the closing tag *i.e*, , but this may raise unexpected results.
3. So, it is both a good convention and we must use the closing tag.

For example :

```
<!DOCTYPE html>
<html>
<head>
    <title>Paragraph</title>
</head>
<body>
    <p> Quantum Series for engineering student.</p>
    <p> It is the complete one stop solution for a simple yet effective guidance for core engineering subjects.</p>
</body>
</html>
```

OUTPUT :

Quantum Series for engineering student.

It is the complete one stop solution for a simple yet effective guidance for core engineering subjects.

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4. Properties of paragraph tag :
   i. The <p> tag automatically adds space before and after any paragraph, which is basically margins added by the browser.
   ii. If a user adds multiple spaces, the browser reduces them it to a single space.
   iii. If a user adds multiple lines, the browser reduces them to a single line.

HTML line breaks :

i. The HTML <br> element defines a line break.
ii. The <br> tag is an empty tag which means that it has no end tag.
iii. The <br> tag is used, if we want a line break (a new line) without starting a new paragraph :

For example :

```
<p> This is <br> a paragraph <br> with line breaks.</p>
```

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2 UNIT

Elements of HTML

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PART-1

Elements of HTML, IITML Tags.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 2.1. What are the elements of HTML ?

Answer

1. Elements are the building blocks of an HTML document. The browser interprets an HTML document on the basis of the element types that are added in the document.
2. An HTML document is displayed with all the properties specified by the elements embedded in it.
3. An element instructs the Web browser how to display the HTML document on the user's screen.
4. The structure of an HTML element consists of three basic components : an opening/starting tag, a closing/ending tag, and the content of the element enclosed between the opening and closing tags, as shown in the following code :

```
<p>
This is my first paragraph.
</p>
```

5. **In the preceding code :**
   i. : Represents the opening tag of the paragraph element.
   ii. : Represents the closing tag of the paragraph element.
   iii. This is my first paragraph : Represents the content enclosed between the opening and closing tags.
6. The opening tags are written within opening angle bracket (<) and closing angle bracket (>) signs. For example, <P>, <HEAD>, <BODY>, and <HTML> are the opening tags.
7. The closing tags are written within the < and > signs, with a forward slash (/) appended before the name of the tag. For example, </P>, </HEAD>, </BODY>, and </HTML> are the closing tags.
8. The names of the tags are not case sensitive. It means that the tag written in the lower case, such as <head>, is the same as the tag written in the upper case, such as <HEAD>.

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9. The HTML elements are pre-defined, which means we cannot create our own tags and must use these predefined tags only.
10. HTML elements are categorized into the following types :
    i. Root
    ii. Metadata
    iii. Section
    iv. Heading
    v. Flow
    vi. Phrasing
    vii. Embedded
    viii. Interactive

Que 2.2. **Discuss the following :**

i. Root elements **iii. Flow elements**
ii. Heading elements **iv. Phrasing elements**

Answer

i. Root elements :

1. Root elements represent the main or the starting element that should be present in all HTML document.
2. The HTML element is the first element that comes after the <!DOCTYPE> element and within which other HTML elements are specified.
3. This element allows the browser to identify the document type.

ii. Heading elements :

1. Heading elements are used to provide different heading levels in the HTML documents.
2. These elements are used to create headlines of a text.
3. A heading element is defined as <H*n*>, where *n* ranges from 1 to 6.

iii. Flow elements :

1. Flow elements are used in the body of HTML documents or applications.
2. The body of the HTML document contains almost all the elements of HTML that are used to display different types of content, such as plain text, links, and images in the HTML document.
3. **Lists the flow elements present in HTML :**
    a. **A :** Represents a link in an HTML document.
    b. **ABBR :** Represents an abbreviation.

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iv. Phrasing elements :

1. Phrasing elements are used to represent the text of the HT document. These elements are also used to mark up the H document text within the paragraphs of the document.
2. To organize the text of HTML document by using various ele For example, the P element is used for defining paragraphs used for line break, CITE is used for citation, and SUB an elements are used for subscript and superscript.
3. **Lists the phrasing elements present in HTML :**
   a. **AUDIO :** Represents audio and sound streams.
   b. **AREA (if it is a descendant of a map element) :** Represents an area of an image map.

Que 2.3. Explain embedded and interactive elements.

Answer

Embedded elements :

1. Embedded elements are used to import content from other sources into the HTML document.
2. For example, the EMBED element is used as an integration point to plug in the content from other sources into the HTML document.
3. **List of embedded elements :**
   i. **AUDIO :** Represents audio and sound streams.
   ii. **CANVAS :** Allows us to draw graphics using JavaScript.
   iii. **EMBED :** Represents the plugin content in an HTML documents.

Interactive elements :

1. Interactive elements are specifically intended for user interaction.
2. Some examples of interactive elements are AUDIO, VIDEO, and IMG.
3. **List of interactive elements :**
   i. **IFRAME :** Represents an inline frame.
   ii. **LABEL :** Represents label for an input element.
   iii. **Button :** Represents a push button.

Que 2.4. What are metadata elements ?

Answer

i. **The metadata elements are used to set the presentation or behaviour of the remaining content of a document.**

ii. **The elements can also be used to set a relationship of a document with other documents.**

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iii. **List of metadata elements :**

1. **The TITLE element :**
   a. The TITLE element contains the title of the HTML document, which appears in the title bar of the Web browser.
   b. This element is used by search engines to select the document and display it in the search result.
   c. Each HEAD element should contain a TITLE element.
   d. **Attributes of the TITLE element :**
      1. **Class :** Specifies the class of an element in an HTML document.
      2. **Id :** Specifies a unique alphanumeric identifier for an element in the document.
      3. **Lang :** Specifies the language used by an element.
      4. **Style :** Specifies an inline style to render an element in the document.

2. **The BASE element :**
   a. The BASE element is used to specify a default URL and target for all the links in an HTML document.
   b. We can set a base URL for all the links once at the top of the document by using the BASE element.
   c. This element appears within the HEAD element of the document and should be used as the first element in the HEAD element.
   d. This enables the other elements in the head section to use the information of the BASE element.
   e. **Attributes of the BASE element :**
      i. **Href :** Specifies a URL in an HTML document.
      ii. **Target :** Specifies the locations where the links of an HTML document open. The following are the possible values of the target attribute :
         a : **_blank :** Opens the link in a new window.
         b : **_parent :** Opens the link in the same frame the link is clicked.
         c : **_self :** Opens the link in the present frameset.
         d : **_top :** Opens the link in the same window.
         e : **<framename> :** Opens the link in the respective frame.

3. **The LINK element :**
   a. The LINK element is used to link an HTML document to other HTML documents. It also defines the relationship between two different HTML documents.

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b. The LINK element contains the href attribute to specify the destination URL of a link.

c. The href attribute is a required attribute that must have a valid URL. If this attribute is not specified, then the LINK element does not define a link.

Table 2.4.1. Attributes of the LINK element.

S. No.	Attribute	Value	Description
1.	href	URL	Specifies the target URL we navigate after clicking a link.
2.	hreflang	language_code	Defines the base language of the target URL.
3.	media	screen, projection, handheld, print	Specifies the device on which the HTML document is displayed.

4. The META element :

a. The META element is used to provide information about an HTML document, such as page description and keywords.

b. This element appears inside the HEAD element and has five attributes : charset, contect, http-equiv, name, and scheme, from which only content is a required attribute.

Table 2.4.2 : Attributes of the META element.

S. No.	Attribute	Value	Description
1.	charset	character encoding	Defines character encoding for the document.
2.	contents	some_text	Defines the content of the meta data.
3.	http-equiv	content-type expires, refresh, set-cookie	Provides information on the contents attribute to an http header.

5. The COMMAND element :

a. The COMMAND element is used to execute a command when an event is fired by a form control, such as radio button or checkbox.

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Table 2.4.3. Attributes of the COMMAND element.

S. No.	Attribute	Value	Description
1.	type	command (default) checkbox, radio	Specifies the type of command.
2.	label	some_text	Specifies the name of the command that is to be displayed on an HTML page.
3.	icon	URI	Specifies the location of the image that is to be displayed as the icon of an HTML page.

6. **The NOSCRIPT element :**
   a. The NOSCRIPT element is used to display the alternate content on the Web browser that either does not support JavaScript or has disabled JavaScript.
   b. If the JavaScript is enabled or supported by the Web browser, the NOSCRIPT element is not considered.
7. **The SCRIPT element :**
   a. The SCRIPT element is used to declare a script, such as JavaScript, within an HTML document.
   b. This element either contains scripting statements or points to an external script file through the src attribute.
   c. We can use the SCRIPT element for validating Web forms and manipulating the content and images present on these forms.
   d. The SCRIPT element has five attributes : async, type, charset, defer, and src.

Table 2.4.4. Attributes of the SCRIPT element.

S. No.	Attribute	Value	Description
1.	async	true, false	Specifies whether the script should be executed asynchronously or not.
2.	type	text/ecmascript text/Javascript application/ ecmascript application/ javascript text/vbscript	Specifies the MIME type of the script.
3.	charset	charset	Specifies the character encoding used in the script.
4.	defer	true, false	Specifies whether or not the browser can continue parsing the HTML document.

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8. **The STYLE element :**
   a. The STYLE element is used to declare the style sheets within the HTML document. This element specifies how the HTML elements are rendered in a browser.
   b. The STYLE element has three attributes : type, media, and scoped.
   c. The STYLE element is placed inside the HEAD element but if we use the scoped attribute, then we can place the STYLE element in the BODY element of the document.

Table 2.4.5. Attributes of the STYLE element.

S. No.	Attribute	Value	Description
1.	type	text/css	Specifies the type of content, such as simple text or style sheet in an HTML document.
2.	media	Screen, projection, handheld, print	Specifies the destination medium where the style is applied.
3.	scoped	scoped	Specifies the style elements, that is the parent element and its child elements.

Que 2.5. **Discuss about section elements.**

Answer

i. The section elements are used to define the scope of headers, footers and various other sections of an HTML document.

ii. Different section elements are used to define different parts of a document. For example, the BODY element is used to define the full body of the document, which also includes other section elements.

iii. The following is a list of section elements :

1. **The BODY element :**
   a. The BODY element of the HTML document contains the main content of the document.
   b. The BODY element is placed after the closing tag of the HEAD element in the HTML element.
   c. The BODY element includes text, hyperlinks, images, and lists.

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The following code snippet shows the use of the BODY element in an HTML document :

```
<HTML>
<HEAD>
</HEAD>
<BODY>
Content of the HTML document
</BODY>
</HTML>
```

2. **The SECTION element :**
   a. The SECTION element is used to represent a generic section of an HTML document or application.
   b. This element groups the related content of the HTML document.
   c. It also contains other new semantic elements, such as header and footer and other HTML elements.

   The following code snippet shows an example of the SECTION element :

```
<SECTION>
<H1>HTML5</H1>
<P>Example of the SECTION element </P>
```

3. **The NAV element :**
   a. The NAV element is used to navigate from one HTML page to another.
   b. The element displays a group of links on an HTML document.
   c. To go to a particular HTML page, we can click the link associated with that page.

   The following code snippet shows an example of the NAV element :

```
<NAV>
<H1>Navigation</H1>
<UL>
<LI><A href="articles.html">Articles</A></LI>
<LI><A href="today.html">Today's to do list</A></LI>
</UL>
</NAV>
```

4. **The ARTICLE element :**
   a. The ARTICLE element is used to represent a section that contains the information about an HTML page, such as its title and the date of its creation.

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b. To display the information in this element in various formats, such as a news article, a blog post, or user's comments section.

The following code snippet shows an example of using the article element :

```
<ARTICLE>
<HEADER>
Some heading content
</HEADER>
<P>Some article content </P>
</ARTICLE>
```

5. The ASIDE element :

a. The ASIDE element allows to create a section that is used to display information about the content of other elements, such as time and date, current news, and weather report.

b. This element can also be used for inserting typographical effects in a document, such as sidebars for advertisements, links, notes, and tips.

The following code snippet shows an example for the ASIDE element :

```
<BODY>
<HEADER>
    <H1>Article Heading</H1>
    <P>Article content</P>
</HEADER>
<ASIDE>
    Enter some content related to the article
</ASIDE>
</BODY>
```

6. The HEADER element :

a. The HEADER element is used to provide the introductory content on an HTML pages.

b. The HEADER element can contain headings, paragraphs, links, and other content.

The following code snippet shows an example for the HEADER element :

```
<HEADER>
<H1>Heading level 1</H1>
```

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```
</UL>
</NAV>
</HEADER>
```

7. **The FOOTER element :**

   a. The FOOTER element is used to represent the footer, which contains various types of information, such as links and copyright data related to a document or a section of the document.

   The following code snippet shows an example of the FOOTER element :

```
<FOOTER>
<UL>
    <LI>Home</LI>
    <LI>Links</LI>
    <LI>About</LI>
</UL>
</FOOTER>
```

8. **The ADDRESS element :**

   a. The ADDRESS element is normally defined at the header or footer of the HTML page and is used to display the contact information for a document or part of a document.

   b. Such contact information may include the names of the document's owners, maintainers, e-mail addresses for feedback, postal addresses, and phone numbers.

   c. The content of this element appears in italics on the Web browser.

   The following code snippet shows an example of the ADDRESS element :

```
<ADDRESS>
<A href=". /Anderson/"s Mathew Anderson</A>
<A href=". /Dave/"s Matt Dave</A>
contact persons for the <A href="Active">W3C HTML
Activity</A>
</ADDRESS>
```

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Que 2.6. **Describe about HTML tags.**

Answer

i. Tags are instructions that are embedded directly into the text of the document.

ii. By convention all HTML tags begin with an open angle bracket "<" and end with a close angle bracket ">".

iii. HTML tags are of two types :

1. **Paired tags :**
   - i. A tag is said to be a paired tag if it, along with a companion tag, flanks the text. For example the <B> tag is a paired tag.
   - ii. The <B> tag with its companion tag </B> causes the text contained between them to be rendered in bold.
   - iii. The effect of other paired tags is applied only to the text they contain.
   - iv. In paired tags, the first tag <B> is often called the opening tag and the second tag </B> is called the closing tag.
   - v. The opening tag activates the effect and the closing tag turns the effect off.
2. **Singular tags :**
   - i. The singular (or stand-alone) tag does not have a companion tag. For example <BR> tag will insert a line break.
   - ii. This tag does not require any companion tag.

Que 2.7. **Write HTML code to develop a web page having two frames that divide the page into two equal rows and divides the first row into equal columns. Fill each with the different background colour.** **AKTU 2013-14, Marks 06**

Answer

```
<HTML>
<FRAME ROWS = "50%, 50%">
<FRAMESET COLS ="50%, 50%">
<FRAME SRC="File 1.html"> </FRAME>
<FRAME SRC="File 2.html"> </FRAME>
</FRAMESET>
<FRAME SRC ="File 3.html"> </FRAME>
</FRAMESET>
</HTML>
```

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For background colour :

For File 1.html :

```
<HTML>
<BODY BGCOLOR = "RED">
</BODY>
</HTML>
```

For File 2.html :

```
<HTML>
<BODY BGCOLOR = "GREEN">
</BODY>
</HTML>
```

For File 3.html :

```
<HTML>
<BODY BGCOLOR = "BLUE">
</BODY>
</HTML>
```

PART-2

Working with Text, Working with Lists.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 2.8. How to format text with HTML elements ?

Answer

1. HTML provides a set of elements to change the appearance of the text by applying various formatting features, such as bold, italic, subscript, and superscript.
2. These elements are used with starting and ending tags, as shown in the following example :

   <I> an example of italic text </I>
3. In the preceding example, the opening tag <I> indicates the start of the italicized text and the closing tag </I> marks the end of the italicized text.
4. HTML formatting elements are grouped into two categories :

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i. **Formatting with HTML physical style elements :**

a. HTML uses physical style elements to change the appearance of text.

b. If we want our text to appear in a particular style, such as bold or italic, we must use physical style element.

c. Following is a list of the physical style elements in HTML :

1. **The B element :** Displays the text in bold.
2. **The I element :** Displays the text in italics.
3. **The SMALL element :** Displays the text in small font size.
4. **The SUB element :** Displays the text as subscript.
5. **The SUP element :** Displays the text as superscript.

ii. **Formatting with HTML logical style elements :**

a. In HTML, logical style elements specify that the enclosed text has a specific meaning, context, or usage.

b. The advantage of using logical style elements is that the meaning related to the element is more precisely conveyed to the users.

c. The different types of logical style elements are as follows :

1. **ABBR :** Displays abbreviation on a Web page.
2. **CODE :** Refer to the program code.
3. **SAMP :** Displays sample program output on a Web page.
4. **KDB :** Refers to the keyboard keys.
5. **EM :** Emphasizes text.
6. **STRONG :** Emphasizes text by increasing boldness.

Que 2.9. **How to define the MARK element, STRONG element, CODE element, SMALL element ?**

Answer

MARK element :

1. The MARK element is used to mark or highlight the text in an HTML document for reference purposes.
2. The style attribute of the MARK element is used to set the color with which we want to highlight the text.
3. We can also change the font style and font size of the marked text.
4. If the style attribute is not defined, then no highlighted text is displayed.
5. The attributes of the MARK element :

i. **Class :** Indicates a class name for the MARK element.

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iii. **Style :** Indicates an inline style for the MARK element.

iv. **Title :** Indicates a tile for the MARK element.

STRONG element :

1. The STRONG element is used to emphasize important text.
2. This element increases the font weight of the text and makes the text appear as bold. This helps to recognize the important text in the HTML document.
3. The attributes of the STRONG element :
   i. **Class :** Indicates a class name for the STRONG element.
   ii. **Id :** Indicates a unique id for the STRONG element.
   iii. **Style :** Indicates an inline style for the STRONG element.
   iv. **Title :** Indicates a tile for the STRONG element.

CODE element :

1. The CODE element is used to represent the computer code in an HTML document.
2. The attributes of the CODE element :
   i. **Class :** Indicates a class name for the CODE element.
   ii. **Id :** Indicates a unique id for the CODE element.
   iii. **Style :** Indicates an inline style for the CODE element.
   iv. **Title :** Indicates a tile for the CODE element.

SMALL element :

1. The SMALL element is used to display the text as a side comment or in small print. The small prints include disclaimers, legal restrictions, and copyrights.
2. The attributes of the SMALL element :
   i. **Class :** Indicates a class name for the SMALL element.
   ii. **Id :** Indicates a unique id for the SMALL element.
   iii. **Style :** Indicates an inline style for the SMALL element.
   iv. **Title :** Indicates a tile for the SMALL element.

Que 2.10. **Discuss about list.**

Answer

1. All lists, whether ordered, unordered, or definition, share similar elements.
2. Each HTML list has the following structure :

<list_tag>

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<item_tag>Item text</item_tag>
<item_tag>Item text</item_tag>
...
</list_tag>

3. For each list, there is a list opening tag, a corresponding closing tag, and individual item tags for each element in the list.
4. The entire list must be delimited by list open and close tags, with list items appearing between the two tags with open and close tags of their own.

Que 2.11. What are ordered list ?

Answer

1. Ordered lists have elements that are preceded by numbers or letters.
2. They are meant to provide a sequence of ordered steps for an activity.
3. Such a list might resemble the following :
   a. Press and hold the reset button until the power light blinks rapidly.
   b. Release the reset button.
   c. Wait until the power light returns to a steady state.
4. Ordered lists use the ordered list tag <ol> to delimit the entire list, and the list item tag <li> to delimit each individual list item.
5. In the following example, the list has three elements numbered with Arabic numbers. This is the default for ordered lists in HTML, as shown in the following code :

```
<html>
<head>
<title>Example Ordered List</title>
</head>
<body>
<p>
<ol>
<li> Press and hold the reset button until the power light blinks rapidly.
</li>
<li> Release the reset button.</li>
<li> Wait until the power light returns to a steady state.</li>
</ol>
```

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```
</p>
</body>
</html>
```

OUTPUT:

The default ordered list uses Arabic numbers for its items.

1. Press and hold the reset button until the power light blinks rapidly.
2. Release the reset button.
3. Wait until the power light returns to a steady state.

Que 2.12. Discuss about unordered list.

Answer

Unordered (Bulleted) Lists :

1. Unordered lists are similar to numbered lists except that they use bullets instead of numbers or letters before each list item.
2. Bulleted lists are generally used when providing a list of non-sequential items. For example, consider the following list :
   i. Action
   ii. Role playing
   iii. Puzzle
   iv. Adventure
3. Unordered lists use the unordered list tag <ul> to delimit the entire list and the list item tag <li> to delimit each individual list item.
4. In the following example, the list has four elements, each preceded by a small, round, filled bullet.
5. This is the default for unordered lists in HTML, as shown in the following code :

```
<html>
<head>
<title>Example Unordered List</title>
</head>
<body>
<p>
<ul>
<li>Action</li>
<li>Role playing</li>
```

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```
<li>Puzzle</li>
<li>Adventure</li>
</ul>
</p>
</body>
</html>
```

OUTPUT :

Example of an unordered list :

- Action
- Role playing
- Puzzle
- Adventure

Que 2.13. Discuss about definition list.

Answer

1. Definition lists are complex than the other two types of lists because they have two elements for each item *i.e.*, term and definition.
2. However, they are not many formatting options for definition lists, so their implementation tends to be simpler than that of the other two lists.

Consider the list of definitions :

E for Everyone : Games rated E contain content suitable for anyone age 6 or older. Games may contain minimal violence and language in animated fashion.

T for Teen : Games rated T contain content suitable for anyone age 13 or older. Games rated T may contain violence, suggestive content, crude humor, blood, and use of strong language.

M for Mature : Games rated M contain content suitable for anyone age 17 or older. Games rated M may contain intense violence, blood, sexual content, and strong language.

3. The definition items can be coded as list terms and their definitions as list definitions, as shown in the following code.

```
<html>
<head>
<title>Example Definition List</title>
</head>
<body>
```

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```
<h1> Ratings for Video Games</h1>
<p>
<dl>
<dt>E for Everyone:</dt>
<dd>Games rated E contain content suitable for anyone age 6 or older. Games may contain minimal violence and language in animated fashion.</dd>
<dt>T for Teen:</dt>
<dd>Games rated T contain content suitable for anyone age 13 or older. Games rated T may contain violence, suggestive content, crude humor, blood, and use of strong language.</dd>
<dt>M for Mature:</dt>
<dd>Games rated M contain content suitable for anyone age 17 or older. Games rated M may contain intense violence, blood, sexual content, and strong language.</dd>
</dl>
</p>
</body>
</html>
```

Que 2.14. Discuss nested list.

Answer

We can nest lists of the same or different types. For example, suppose we have a bulleted list and need a numbered list beneath one of the items, as shown :

Send us a letter detailing the problem. Be sure to include the following :

1. Your name
2. Your order number
3. Your contact information
4. Detailed description of the problem

In such a case, we would nest an ordered list inside an unordered one, as shown in the following code :

```
<html>
<head>
<title>Example Definition List</title>
</head>
```

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```
<body>
<p>
<ul style="list-style-type: disc;">
<li>Send us a letter detailing the problem. Be sure to include the following:</li>
<ol style="list-style-type: decimal;">
<li>Your name </li>
<li>Your order number </li>
<li>Your contact information </li>
<li>A detailed description of the problem </li>
</ol>
</ul>
</p>
</body>
</html>
```

OUTPUT :

Send us a letter detailing the problem. Be sure to include the following:

1. Your name
2. Your order number
3. Your contact information
4. A detailed description of the problem

PART-3

Tables and Frames, Working with Hyperlinks.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 2.15. **Discuss about tables.**

Answer

1. HTML provides the TABLE element to create a TABLE.
2. The table element helps us to display the information in more than one dimensions, *i.e.*, in a tabular format.

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3. A table consists of columns and rows, where each row is divided into several data cells.
4. A cell can contain text, lists, images, forms, and other tables.
5. A table in a web page can be defined by using the starting and ending tags of the TABLE element.
6. The following code snippet shows an example of using the TABLE element :

```
<table>
    the other table elements and the data.
</table>
```

The elements used in the table element are caption, colgroup, col, tbody, thead, tfoot, tr, td, th.

The table is defined by the following code :

```
<html>
<head>
<title>An HTML Table</title>
</head>
<body>
<p>
<table border="1">
<caption>Table Caption</caption>
<thead>
<tr><td colspan="2">Table Header</td></tr>
</thead>
<tfoot>
<tr><td colspan="2">Table Footer</td></tr>
</tfoot>
<tbody>
<tr><th>Header Cell 1</th><th>Header Cell 2</th></tr>
<tr><td>Body Cell 1</td><td>Body Cell 2</td></tr>
</tbody>
</table>
</p>
</body>
```

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```
</html>
```

OUTPUT :

Table Caption

Table Header	
Header Cell 1	Header Cell 2
Body Cell 1	Body Cell 2
Table Footer	

Que 2.16. **Write a HTML code to design a 'Student Registration Form'. (Make Assumptions).** **AKTU 2014-15, Marks 06**

Answer

```
<html>
<head>
<script type = "text/JavaScript" src = "validate.js"></script>
</head>
<body>
<form action = "#" name = "StudentRegistration"
onsubmit = "return(validate( ) );">
<table cellpadding = "2" width = "20%" bgcolor = "99FFFF"
align = "center" cellspacing = "2">
<tr>
<td colspan = "2">
<center><font size = "4"><b>Student Registration Form</b></font></center>
</td>
</tr>
<tr>
<td>Name</td>
<td><input type = "text" name = "textnames" id = "textname"
size = "30"></td>
</tr>
<tr>
<td>Father Name</td>
<td><input type = "text" name = "fathername" id = "fathername" size =
```

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```
"30"></td>
</tr>
<tr>
<td>Personal Address</td>
<td><input type = "text" name = "personaladdress"
id = "personaladdress" size = "30"></td>
</tr>
<tr>
<td>Sex</td>
<td><input type = "radio" name = "sex" value = "male"
size = "10">Male
<input type = "radio" name = "sex" value = "Female"
size = "10">Female</td>
<input type = "radio" name = "sex" value = "Female"
size = "10">Female</td>
</tr>
<tr>
<td>Course</td>
<td><select name = "Course">
<option value = "– 1" selected>Select</option>
<option value = "B. Tech">B.TECH</option>
<option value = "MCA">MCA</option>
</select></td>
</tr>
<tr>
<td>E-mail</td>
<td><input type = "text" name = "e-mail" id = "e-mail"
size = "30"></td>
</tr>
<tr>
<td>DOB</td>
<td><input type = "text" name = "dob" id = "dob" size = "30"></td>
</tr>
<tr>
<td>Mobile No. </td>
<td><input type = "text" name = "mobileno" id = "mobileno."
```

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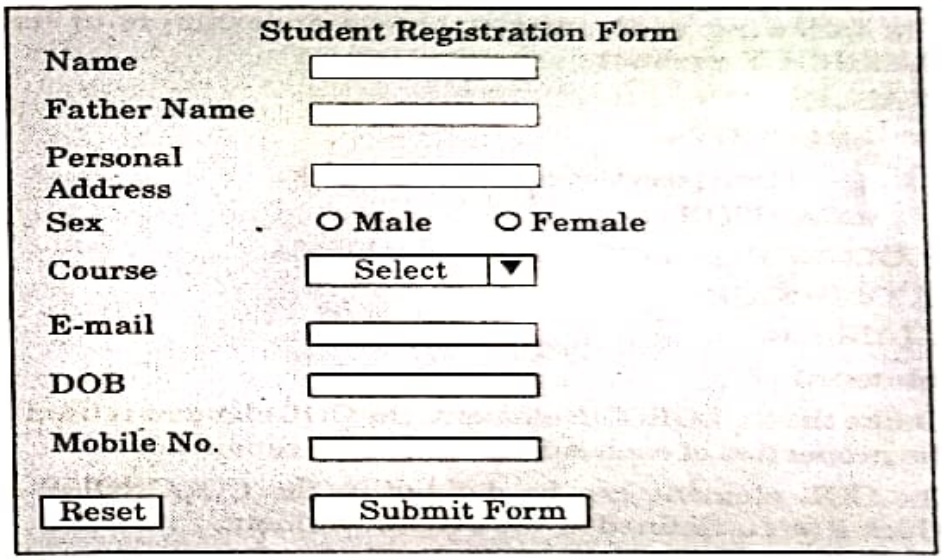
```
size = "30"></td>
</tr>
<tr>
<td><input type = "reset"></td>
<td colspan = "2"><input type = "submit" value = "Submit Form"> </td>
</tr>
</table>
</form>
</body>
</html>
```

OUTPUT :



Que 2.17. Explain the table elements ?

Answer

Following are the table elements :

1. **Caption element :**
   a. The CAPTION element is used to create the caption of a table and is used in conjunction with the TABLE element.
   b. A table should have only one CAPTION element and it must be placed after the starting tag of the TABLE element.
   c. The following code snippet shows an example of using the CAPTION element :

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```
<TABLE>
    <CAPTION>
        Here goes the caption of a table.
    </CAPTION>
</TABLE>
```

2. **COLGROUP element :**
   a. The COLGROUP element is used to specify the properties, such as font color, and background color, border, for a group of columns in a table.
   b. This element is useful in applying a style to multiple columns without defining the style again and again for each cell.
   c. The COLGROUP element must be placed after the CAPTION element and before the TBODY, THEAD, TFOOT, TR elements.
   d. The following code snippet shows an example of using the COLGROUP element :

```
<TABLE>
    <CAPTION>
        Here goes the caption of a table.
    </CAPTION>
<COLGRUP span="3"style="color : blue">
</COLGROUP>
</TABLE>
```

3. **COL element :**
   a. Unlike the COLGROUP element, the COL element is used to define the properties of each column of a table separately.
   b. The COL element can be defined in the COLGROUP element, which itself is defined in the TABLE element.
   c. Each COL element in the COLGROUP element represents a column of the table.
   d. The following code snippet shows an example of using the COL element :

```
<TABLE>
<COL style="background-color : green">
<COL style="background-color : orange">
</TABLE>
```

4. **TBODY element :**
   a. The TBODY element is used to group the rows of a table and is used in conjunction with the THEAD and TFOOT elements.

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d. element :

```
<TABLE>
<THEAD>
...
</THEAD>
<TFOOT>
...
</TFOOT>
<TBODY>
<TR>
<TD> This is first cell of the table </TD>
<TD> This is second cell of the table </TD>
</TR>
<TR>
<TD> This is third cell of the table </TD>
<TD> This is fourth cell of the table </TD>
</TR>
<TR>
<TD> This is fifth cell of the table </TD>
<TD> This is sixth cell of the table </TD>
</TR>
</TBODY>
</TABLE>
```

5. THEAD element :

a. The TREAD element is used to define the header for the table and is used in conjunction with the TBODY and TFOOT elements.

b. We must define the TREAD element as a child of the TABLE element after the CAPTION and COLGROUP elements and before the TBODY, TFOOT, and TR elements.

c. The following code snippet shows an example of using the TBODY element :

```
<TABLE>
<THEAD>
<TR> <TD colspan="2" This is Table Header </TD></TR>
</THEAD>
<TFOOT>
...
</TFOOT>
<TBODY>
```

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```
<TR>
<TD> This is first cell of the table </TD>
<TD> This is second cell of the table </TD>
</TR>
<TR>
<TD> This is third cell of the table </TD>
<TD> This is fourth cell of the table </TD>
</TR>
<TR>
<TD> This is fifth cell of the table </TD>
<TD> This is sixth cell of the table </TD>
</TR>
</TBODY>
</TABLE>
```

6. **TFOOT element :**
   a. The TFOOT element is used to define the footer for the table and is used in conjunction with the TBODY and the TREAD elements.
   b. We must define the TFOOT element as a child of the TABLE element after the CAPTION, COLGROUP, and TREAD elements and before the TBODY and TR elements.
   c. The following code snippet shows an example of using the TBODY element :

```
<TABLE>
<THEAD>
<TR> <TD colspan="2"> This is Table Header </TD></TR>
</THEAD>
<TFOOT>
<TR> <TD colspan="2"> This is Table Footer </TD></TR>
</TFOOT>
<TBODY>
<TR>
<TD> This is first cell of the table </TD>
<TD> This is second cell of the table </TD>
</TR>
<TR>
<TD> This is third cell of the table </TD>
<TD> This is fourth cell of the table </TD>
</TR>
<TR>
<TD> This is fifth cell of the table </TD>
<TD> This is sixth cell of the table </TD>
</TR>
</TBODY>
</TABLE>
```

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7. TR element :

a. The TR element is used to define the rows of a table.

b. A row contains one or more table cells and table data.

c. We can use the TR element in the following contexts :

i. Child of a THEAD element
ii. Child of a TBODY element
iii. Child of a TFOOT element
iv. Child of a TABLE element, after any CAPTION, COLGROUP, and THEAD elements.

d. The following code snippet shows an example of using the TR element :

```
<TABLE>
<TR>
<TD> This is first cell of the table </TD>
<TD> This is second cell of the table </TD>
</TR>
</TABLE>
```

8. TD and TH element :

a. In HTML, a table contains one or more cells that are divided into two categories *i.e.*, standard cells and header cells.

b. The standard cells of a table contain table data, which can be text, image, links, and other tables.

c. These cells are created by using the TD element.

d. The following code snippet shows how to create a standard cell :

```
<TABLE>
<TR>
<TD> This is first cell of the table </TD>
<TD> This is second cell of the table </TD>
</TR>
</TABLE>
```

e. The header cell of a table contains the header information, which can be the heading of a column and other content.

f. The header cells are created by using the TH element.

g. The following code snippet shows how to create a header cell :

```
<TABLE>
<TR>
<TH> first header cell </TH>
<TH> second header cell </TH>
</TR>
<TR>
<TD> first standard cell </TD>
<TD> second standard cell </TD>
</TR>
</TABLE>
```

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Que 2.18. **Write a HTML code to accommodate the table contents of its cell.**

Answer

An HTML table expands to accommodate the contents of its cells. For example, consider the following code.

```
<html>
<head>
<title>HTML Table Widths</title>
</head>
<body>
<p>
<br> Short Text Table<br />
<table border="1">
<tr><td>Short Text 1</td><td>Short Text 2</td></tr>
</table>
</p>
<p>
Longer Text Table<br />
<table border="1">
<tr><td>Longer Text 1</td><td>Longer Text 2</td></tr>
</table>
</p>
<p>
Mixed Text Table<br />
<table border="1">
<tr><td>Short Text</td><td>Even Longer Text</td></tr>
</table>
</p>
</body>
</html>
```

OUTPUT :

Short Text Table

Short Text 1	Short Text 2

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Longer Text Table

Longer Text 1	Longer Text 2

Mixed Text Table

Short Text	Even Longer Text

Que 2.19. **Design a HTML form for a railway reservation system.**

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Answer

```
<html>
<head>
<script type = "text/JavaScript" src = "validate.js"></script>
</head>
<body>
<form action = "#" name = "RailwayReservationSystem"
onsubmit = "return(validate( ) );">
<table cellpadding = "2" width = "20%" bgcolor = "99FFFF"
align = "center" cellspacing = "2">
<tr>
<td colspan = "2">
<center><font size = "4"><b>Railway Reservation System</b></font>
< /center>
</td>
</tr>
<tr>
<td>From</td>
<td><input type = "text" name = "from" id = "from"
size = "30"></td>
</tr>
<tr>
<td>To</td>
<td><input type = "text" name = "to" id = "to" size = "30"></td>
</tr>
<tr>
<td>Train No/Name</td>
<td><input type = "text" name = "trainno"
id = "trainno" size = "30"></td>
</tr>
<tr>
<td>Class</td>
<td><select name = "Class">
<option value = "– 1" selected>Select</option>
<option value = "SL">SL</option>
<option value = "3A">3A</option>
```

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```
<option value = "2A">2A</option>
<option value = "1A">1A</option>
</select></td>
</tr>
<tr>
<td>No. of seats</td>
<td><Select name ="No. of seats">
<option value = "– 1"selected>Select</option>
<option value = "1">1</option>
<option value = "2">2</option>
<option value = "3">3</option>
</select></td>
</tr>
<tr><td>Passenger</td>
<tr><td>Age</td></tr>
<tr><td>Gender</td></tr>
</tr>
<td><input type = "text" name = "P1"size = "30"></td>
<td><input type = "text" name = "age"size = "2"></td>
<td><Select name ="gender">
<option value = "M">M</option>
<option value = "F">F</option></select>
</td></tr>
<tr>
<td><input type = "text" name = "P2"size = "30"></td>
<td><input type = "text" name = "age"size = "2"></td>
<td><Select name ="gender">
<option value = "M">M</option>
<option value = "F">F</option></select>
</td></tr>
<tr>
<td><input type = "text" name = "P3"size = "30"></td>
<td><input type = "text" name = "age"size = "2"></td>
<td><Select name ="gender">
<option value = "M">M</option>
<option value = "F">F</option></select>
</td></tr>
<tr>
<td>Address</td>
<td><input type = "text" name = "address" id = "address"
size = "50"></td>
</tr>
<tr>
<td>Payment Mode</td>
<td><input type = "radio" name = "Paymentmode" value = "Credit/Debit
Card">Credit/Debit Card
```

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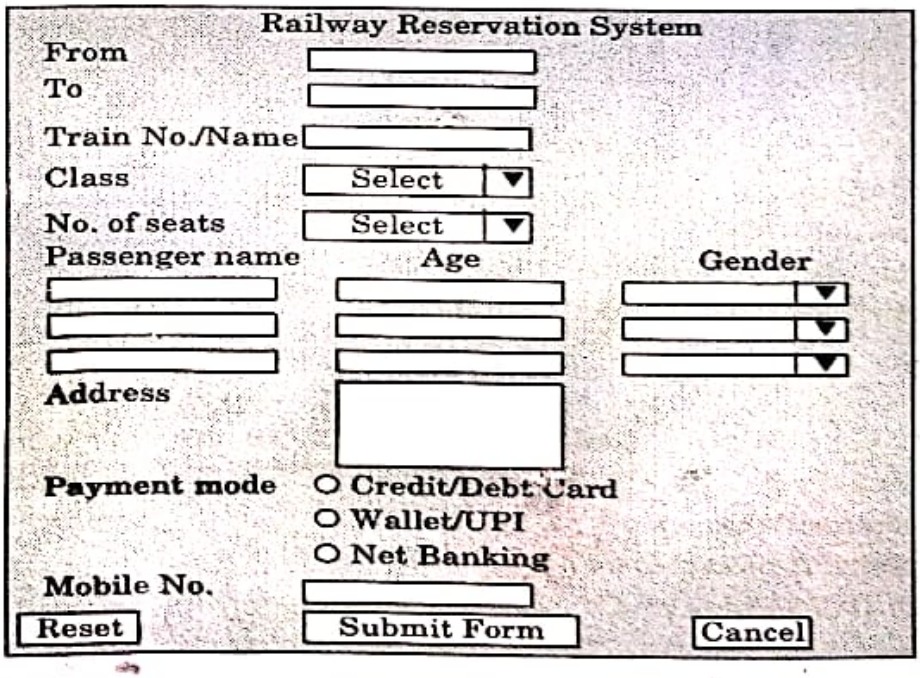
```
<input type = "radio" name = "Paymentmode" value = "Wallet/UPI">Wallet
UPI</td>
<td><input type="radio" name="Paymentmode" value="netbanking">Net
Banking</td>
</tr>
<tr>
<td>Mobile No. </td>
<td><input type = "text" name = "mobileno" id = "mobileno."
size = "30"></td>
</tr>
<tr>
<td><input type = "reset"></td>
<td colspan = "2"><input type = "submit" value = "Submit Form"> </td>
<td>
<input type="Cancel" value="Cancel">
</td>
</tr>
</table>
</form>
</body>
</html>
```

OUTPUT :



Que 2.20. **What is cell spacing and cell padding ?**

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Answer

Cell spacing :

1. Cell spacing is the space between cells.
2. Cell spacing is controlled with the cell spacing attribute and can be specified in pixels or percentages.
3. When specified by percentage, the browser uses half of the specified percentage for each side of the cell.

Cell padding :

1. Cell padding is the space between the cell border and its contents.
2. Cell padding is controlled with the cellpadding attribute. As with cell spacing, we can specify padding in pixels or a percentage.

Que 2.21. Write a HTML code of table border widths.

Answer

```
<html>
<head>
<title>Table Outside Borders</title>
</head>
<body>
<p>
<br>
No Borders<br />
<table border="0">
<tr><td>Cell 1</td><td>Cell 2</td></tr>
<tr><td>Cell 3</td><td>Cell 4</td></tr>
</table>
</p>
<p>
Border = 1<br />
<table border="1">
<tr><td>Cell 1</td><td>Cell 2</td></tr>
<tr><td>Cell 3</td><td>Cell 4</td></tr>
</table>
</p>
<p>
Border = 5<br />
```

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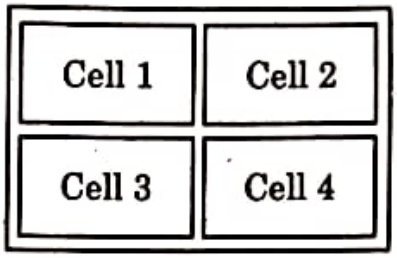
No Borders

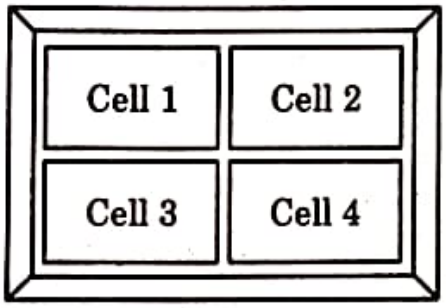
Cell 1 Cell 2

Cell 3 Cell 4

Border = 1



Border = 5



Que 2.22. **What do you mean by rows and cells ?**

Answer

Rows :

1. Table rows are the horizontal elements of the table grid and are delimited with table row tags <tr>. For example, a table with five rows would use the following pseudocode:
   <table>
   <tr> row 1 </tr>
   <tr> row 2 </tr>
   <tr> row 3 </tr>
   <tr> row 4 </tr>
   <tr> row 5 </tr>
   </table>
2. The rows are divided into individual cells by embedded <td> or <th> tags.
3. The table row tag supports the attributes as shown :

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i. **Align :** Set to right, left, center, justify, or char, this attribute controls the horizontal alignment of data in the row.

ii. **Char :** Specifies the alignment character to use with character (Char) alignment.

iii. **Charoff :** Specifies the offset from the alignment character to align the data on. It can be specified in pixels or percentage.

iv. **Valign :** Set to top, middle, bottom, or baseline, this attribute controls the vertical alignment of data in the row. Baseline vertical alignment aligns the text baseline across the cells in the row.

Cells :

1. The individual cells of a table are the elements that actually hold data. In HTML, cell definitions also define the columns for the table.
2. We delimit cells/columns with table data tags <td>.

   For example, consider the following code :

```
<table border="1" cellpadding="5">
<tr>
<td>Column 1</td><td>Column 2</td><td>Column 3</td>
</tr>
<tr>
<td>Column 1</td><td>Column 2</td><td>Column 3</td>
</tr>
</table>
```

3. Supported attributes include are shown :

   i. **Abbr :** An abbreviated form of the cell's contents. User agents can use the abbreviation where appropriate (indicating a short form of the contents, displaying on a small device, and so on). As such, the value of the abbr attribute should be as short and concise as possible.

   ii. **Align :** The horizontal alignment of the cell's contents – left, center, right, justify, or char (character).

   iii. **Axis :** It is used to define a conceptual category for the cell, which can be used to place the cell's contents into dimensional space.

   iv. **Char :** The character used to align the cell's content if the alignment is set to char.

   v. **Charoff :** The offset from the alignment character to use when aligning the cell content by character.

   vi. **Colspan :** It defines the number of columns the cell should span (default = 1).

Que 2.23. **Discuss table captions with example.**

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Answer

Table captions (<caption>) provide an easy method to add descriptive text to a table. For example, suppose we want to caption a table detailing the benefits of certain membership levels. The following code adds an appropriate caption to a table.

```
<html>
<head>
<title>Table Captions</title>
</head>
<body>
<table width="400" border="1">
<caption>The Benefits of Membership</caption>
<tr>
<th>Service</th>
<th>Silver</th>
<th>Gold</th>
</tr>
<tr>
<td>Valet Parking</td>
<td> </td>
<td align="center">X</td>
</tr>
<tr>
<td>Manicure Guarantee</td>
<td align="center">X</td>
<td align="center">X</td>
</tr>
<tr>
<td>Monthly Makeover</td>
<td> </td>
<td align="center">X</td>
</tr>
<tr>
<td>Hair Maintenance</td>
<td align="center">X</td>
<td align="center">X</td>
</tr>
```

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```
<tr>
<td>Massage Discount</td>
<td align="center">X</td>
<td align="center">X</td>
</tr>
<tr>
<td>Monthly 30 min Massage Included</td>
<td> </td>
<td align="center">X</td>
</tr>
<tr>
<td>Light Lunch During Stay</td>
<td> </td>
<td align="center">X</td>
</tr>
<td>Unlimited Tranquility Room Use</td>
<td align="center">X</td>
<td align="center">X</td>
</tr>
<tr>
<td>Unlimited Whirlpool Use</td>
<td align="center">X</td>
<td align="center">X</td>
</tr>
<tr>
<td>8hour Appointment Guarantee</td>
<td> </td>
<td align="center">X</td>
</tr>
<tr>
</table>
</body>
</html>
```

OUTPUT :

The table caption, "The Benefits of Membership," is placed in table as shown :

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The benefits of membership

Service	Silver	Gold
Valet Parking		X
Manicure Guarantee	X	X
Monthly Makeover		X
Hair Maintenance	X	X
Massage Discount	X	X
Monthly 30min Massage Included		X
Light Lunch During Stay		X
Unlimited Tranquility Room Use	X	X
Unlimited Whirlpool Use		X
8hour Appointment Guarantee		X

Que 2.24. **Discuss about spanning columns and rows.**

Answer

1. To span data cells across multiple columns and rows using the colspan and rowspan attributes such spanning is used to provide column or row headings for groups of columns.
2. For example, consider the following table code utilizing the colspan attribute.

```
<html>
<head>
<title>Spanning Columns</title>
</head>
<body>
<table width="400" border="1">
<tr>
<td> </td>
<td colspan="2">Membership<br />Levels</td>
<!-- Above cell spans the two membership columns /-->
</tr>
```

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```
<tr>
<th>Service</th>
<th>Silver</th>
<th>Gold</th>
</tr>
<tr>
<td>Valet Parking</td>
<td> </td>
<td align="center">X</td>
</tr>
<tr>
<td>Manicure Guarantee</td>
<td align="center">X</td>
<td align="center">X</td>
</tr>
<tr>
<td>Monthly Makeover</td>
<td> </td>
<td align="center">X</td>
</tr>
<tr>
<td>Hair Maintenance </td>
<td align="center">X</td>
<td align="center">X</td>
</tr>
<tr>
<td>Massage Discount </td>
<td align="center">X</td>
<td align="center">X</td>
</tr>
<tr>
<td>Monthly 30min Massage Included</td>
<td> </td>
<td align="center">X</td>
</tr>
<tr>
<td>Light Lunch During Stay</td>
<td> </td>
<td align="center">X</td>
</tr>
```

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```
<tr>
<td>Unlimited Tranquility Room Use </td>
<td align="center">X</td>
<td align="center">X</td>
</tr>
<tr>
<td>Unlimited Whirlpool Use </td>
<td> </td>
<td align="center">X</td>
</tr>
<tr>
<td>8hour Appointment Guarantee</td>
<td> </td>
<td align="center">X</td>
</tr>
</table>
</body>
</html>
```

OUTPUT :

	Membership level	
Service	**Silver**	**Gold**
Valet Parking		X
Manicure Guarantee	X	X
Monthly Makeover		X
Hair Maintenance	X	X
Massage Discount	X	X
Monthly 30min Massage Included		X
Light Lunch During Stay		X
Unlimited Tranquility Room Use	X	X
Unlimited Whirlpool Use		X
8hour Appointment Guarantee		X

Que 2.25. Describe frames.

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Answer

1. Frames provide multiple separately scrollable areas within one user window. Many non-Web applications use the technique of separate panes to provide organization and controls.
2. Frames are complex to implement, as they require a separate document to define the frame layout as well as individual documents to actually occupy the frames.

Creating a frameset :

A frameset is created like any other HTML document except that its content is limited to frame-related tags. The following code is an example of a frameset document :

```
<html>
<head>
—
</head>
<frameset attributes>
<frame attributes></frame>
<frame attributes></frame>
—
</frameset>
</html>
```

The frameset tag :

1. The frameset tag (<frameset>) defines the layout of the frames in the document.
2. It does so by specifying whether the frames should be laid out in columns or rows and what each column's width should be.
3. The frameset tag has the following format :

   <frameset cols | rows = "column_or_row_size(s)">
4. The column or row sizes can be specified as percentages of the user agent window; pixels; or an asterisk (*), which enables the user agent to assign the size.

The frame tag :

1. While the frameset tag (<frameset>) is responsible for defining the layout of the entire page (in terms of number of frames and their size), the frame tag (<frame>) is responsible for defining properties of each frame.

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2. The frame tag has the following minimal syntax :

<frame name="name_of_frame" src="url_of_content"></frame>

3. The name attribute gives the frame a unique name that can be referenced by URLs, scripts, and so on to control the frame's contents. The src attribute is used to specify the URL of the content the frame should display.

Frame margins, borders, and scroll bars :

1. The frame tag supports the additional attributes shown in Table.

Attribute	Value(s)	Definition
Frameborder	0 = no border (default) 1 = border	Indicates whether the frame has a border or not.
Longdesc	url	A document's URL to use as a long description for the frame.
Marginheight	pixels	Sets the top and bottom margins for the frame, the distance of the frame's content from its border.
Marginwidth	pixels	Sets the left and right margins for the frame, the distance of the frame's content from its border.
Scrolling	yes no auto (default)	Controls whether the frame displays scroll bars to help scroll the content displayed in the frame.

Que 2.26. What are inline frames ?

Answer

1. Inline frame is defined as a method to enable smaller pieces of content to be incorporated in scrollable containers within a larger document.
2. Although we can use regular framesets to create individually scrolling regions, the layout is somewhat hampered by the stringent row and column layout design inherent in framesets.
3. Inline frames are accomplished with the <iframe> tag.
4. This tag has the following minimal format :

<iframe src="url_of_content"></iframe>

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Inline Frame Tag Attributes

Attribute	Value(s)	Definition
Align	Left right top middle bottom	Alignment of the frame to surrounding text.
Frameborder	0 = no border 1 = border (default)	Indicates whether the frame has a visible border or not.
Height	pixels %	Height of the frame
Longdesc	url	URL to a document containing the long description of the frame.
Marginheight	pixels	Size of the internal top and bottom margins of the frame.

Que 2.27. Describe about working with hyperlinks.

Answer

1. A hyperlink interconnects the current Web page with the other Web pages available on the Internet. In HTML, we can create a hyperlink by using the anchor element (A).
2. The hyperlink redirects the user to another HTML page, image, or file.
3. The A element uses the href attribute to specify the target resource or document that we want to open when the user clicks the hyperlink.
4. The term href stands for Hypertext Reference. The href attribute sets the URL of the target resource.
5. The concept of hyperlink in a better way by exploring the target and id attributes.

The target attribute :

1. The A element uses the target attribute to specify a window where we want to open a document when a hyperlink is clicked.
2. HTML defines five values, _blank, _self, _parent, _top, and framename for the target attribute.
3. In addition to the predefined values we can specify the name of the frame in which we want to open a document. However, the name of the frame must be preceded by an underscore (_) character.
4. Table 2.24.1 describes the values for the target attribute :

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Table 2.27.1 Values for the target attributes

Value	Description
_blank	Opens the linked document in a new unnamed window
_self	Opens the linked document in the current window (this is default value)
_parent	Opens the linked document in the parent window
_top	Opens the linked document in the topmost window
framename	Opens the linked document in a named frame

The id attribute :

1. The A element uses the id attribute to create a fragment identifier within a document.
2. A fragment identifier specifies a particular location within a document.
3. We can navigate different locations within a document by using the id attribute.
4. The id attribute takes a character string as a value. This value must be unique in the same document; however, it can be reused in different documents.
5. For example, <A id="top"></A> first defines a location within the document and then <A href="#top"> Go to Top</A> provides reference to that location with a hyperlink containing fragment identifier.
6. The hash symbol (#) indicates that the value is a fragment identifier.
7. This concludes that URL followed by the # symbol along with defined location (fragment identifier) is used to redirect to a particular named hyperlink.

PART-4

Images and Multimedia, Working with Forms and Controls.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 2.28. **Write a short note on images.**

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Answer

1. Images provide a graphical means to convey a message. Using the image type of the <input> tag, we can add images to the form, images that can be used along with other form elements to gather data.
2. The image field has the following format :

   <input type="image" id="id_of_field" name="name_of_field"
   src="url_to_image_file" />
3. The image type of the <input> tag also serves as a submit button, giving the option of easily providing a graphical button.
4. If we include an image type <input> tag in the form and click the resulting image, it will behave like a Submit button (and likely submit the form).
5. However, like the button field, image fields by themselves do not provide any actual form controls.
6. To use the image for input purposes beyond submitting the form, it must be linked to a script.
7. The following example causes the image buynow.jpg to be displayed on a form. When the image is clicked, the script buynow is run.

   <input type="image" id="BuyNow" name="BuyNow_graphic"
   src="buynow.jpg"
   onclick="buynow()"/>

Que 2.29. How to insert images on webpage ?

Answer

1. HTML allows us to insert an image in a web page with the help of IMG element.
2. This element uses several attributes, such as src, id, lang, dir, and alt.
3. Out of all the attributes of IMG element, only the src attribute is necessary and all the other attributes are optional. The src attribute provides information about the path of the image file to the web browser.
4. The syntax to insert an image in a web page is as follows :

   <IMG src = "name of the file" /> // when both files are in same folder

   or

   <IMG src= "full path of the image file with file name"/> // when image file in other folder
5. In the syntax, the IMG element is used to add an image in a web page. The attribute of the IMG element is src, which specifies the path of the image.

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6. Other attributes that can be used with the IMG element are as *follows :*
   - i. **Id :** Assigns a unique identifier to an element. This identifier must be used only once in a document. This attribute is optional.
   - ii. **Class :** Assigns a single name or a set of class names to an element. However, one or more elements can be assigned with a same class name. This attribute is optional.
   - iii. **Lang :** Specifies the base language used for the IMG element. This attribute is optional.
   - iv. **Dir :** Assigns a direction to entire or a section of HTML file. This attribute is optional.
   - v. **Title :** Describes the objective of the use of the IMG element. This attribute is optional.
   - vi. **Style :** Applies inline CSS styles on individual elements in an HTML file. This attribute is optional.
   - vii. **Src :** Specifies the URL or the location of the image. This attribute is mandatory.
   - viii. **Alt :** Specifies the alternate text to be used, if the web browser cannot render the image. This attribute is optional.
   - ix. **Height :** Specifies the height of the image. This attribute is optional.
   - x. **Width :** Specifies the width of the image. This attribute is optional.
   - xi. **Ismap :** Indicates that the image is used as an image map. This attribute is optional.
   - xii. **Usemap :** Associates an element with an image map. This attribute is optional.

Que 2.30. **Describe different formats of image.**

Answer

Different types of image formats in Web pages :

1. **The GIF image format :**
   - i. GIF files are used for web graphics.
   - ii. They can be animated and are limited to only 256 colors and allow transparency.
   - iii. GIF files are small in size and are portable.
   - iv. There are two types of GIF images :
     - a. **GIF87 :** Does not support image transparency and animation.
     - b. **GIF89a :** Supports image transparency and animation.
2. **The JPEG image format :**
   - i. JPEG supports unlimited number of colors and has the .jpeg or .jpg extension. JPEG uses a complex compression algorithm, known as the JPEG algorithm.

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ii. We can convert any image format into the JPEG image format by using the JPEG algorithm.

iii. The JPEG image format has certain standards that specify codecs, which define the process to compress an image into bytes and again decompress the bytes into the image.

iv. Exchangeable Image File Format (EXIF) and Joint Photographic Experts Group (JFIF) are the most commonly used standards of JPEG.

3. **The PNG image format :**

i. The PNG image format has all the features of GIF. PNG uses a lossless compression algorithm and supports unlimited number of colors.

ii. The lossless compression algorithm prevents any loss that occurs while compressing an image.

iii. PNG provides alpha transparency, which allows us to have variable levels of opacity as compared to GIF.

Que 2.31. **Create a web page, named gifImage.html to display a GIF image.**

Answer

Showing the code for the gifImage.html File :

```
<!DOCTYPE HTML>
<HTML>
    <HEAD>
        <TITLE>Images</TITLE>
</HEAD>
<BODY>
    <H2>Displaying a GIF Image </H2>
    <IMG src = "ProgressBar.gif"/>
    </BODY>
<HTML>
```

Que 2.32. **How do you make an image clickable in HTML ? Illustrate with an example.** **AKTU 2014-15, Marks 06**

OR

Explain image is HTML.

Answer

1. HTML accepts two picture file formats : .gif and .jpg (.jpeg).

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2. To add an image to web page we used the <IMG> tag, which takes the name of the image file as an attribute, also control the height, width, border etc.
3. The <IMG> tag takes the following attributes :
   a. **ALIGN :** The ALIGN attribute allows us to position an image relative to the line of text. All graphical web browsers recognize these values TOP, MIDDLE and BOTTOM.
   b. **BORDER :** Specifies the size of the border to place around the image.
   c. **WIDTH :** Specifies the width of the image in pixels.
   d. **HEIGHT :** Specifies the height of the image in pixels.
   e. **HSPACE :** Indicates the amount of space to the left and right of the image.
   f. **VSPACE :** Indicates the amount of space to the top and bottom of the image.
   g. **ALT :** Indicates the text to be displayed in case the browser is unable to display the image specified in the SRC attribute.
   h. **SRC :** Specifies the location and name of the image file.

Creating an image link :

We can also make a clickable link (image displayed with a blue border) indicating that it is a hyperlink.

Example : <A HREF = "QUANTUM.HTM">

<IMG SRC = "QUANTUM.GIF" BORDER = "10"> </A>

This tells the web browser that the image file "QUANTUM.GIF" is clickable, and any click on the image should be directed to the home page (QUANTUM.HTM).

Que 2.33. Define multimedia. Describe the multimedia elements.

Answer

1. Hypertext Markup Language (HTML) helps to add multimedia files on the website by providing various multimedia elements.
2. These elements include AUDIO, VIDEO, EMBED, and OBJECT. The AUDIO element is used to display the audio file on the Web page; whereas, the VIDEO element is used to display the video files on the Web page.
3. The EMBED and OBJECT elements display the multimedia files on a Web page as well as embed the files from other websites.
4. HTML5 has introduced two new multimedia elements, AUDIO and VIDEO, for displaying the audio and video streams on a Web page.
5. We can play the multimedia files, which are stored in our local computer, on the web page by specifying their location.

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6. The src attribute is used to specify the multimedia file to play it on the web page. If the web browser does not support AUDIO and VIDEO elements, then the text defined between the starting and closing tags of these elements is displayed on the Web page.

The attributes of AUDIO element :

1. **Autoplay :** Plays the audio file as soon as the Web page loads.
2. **Controls :** Displays the controls on the Web page, such as play and pause buttons.
3. **Loop :** Replays the audio files.
4. **Preload :** Specifies whether the audio file is preloaded on the Web page or not.
5. **Src :** Provides the location of the audio file to play.

The attributes of VIDEO element :

1. **Audio :** Controls the defaults state of the video's audio channel.
2. **Autoplay :** Plays the audio file as soon as the web page loads.
3. **Controls :** Displays the controls on a web page, such as play and pause buttons.
4. **Height :** Specifies the heights of the VIDEO element.
5. **Loop :** Replays the video file.
6. **Preload :** Specifies whether the video file is preloaded on the web page or not.
7. **Poster :** Provides an image to be displayed when the video file is not available.
8. **Src :** Provides the location of the video file to play.
9. **Width :** Specifies the width of the VIDEO element.

Que 2.34. Discuss audio files. List down the commonly used audio file formats.

Answer

1. An audio file is used to store audio data on various devices, such as a computer system, mp3 players, and mobile phones.
2. To store an audio data, convert it into a digital format.
3. The process of converting audio data into a digital file is called encoding of the raw audio data.
4. It involves taking samples of audio data and storing them in a compressed format to reduce the file size.
5. An audio player decodes these compressed sample files to make the audio waves audible.

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6. The process of converting a digital file into the audio data is known as decoding. A codec performs the encoding and decoding of the raw audio data.

Following is a list of the commonly used audio file format :

i. Advanced Audio Coding (AAC) File Format :

1. AAC offers lossy audio compression, encoding scheme for digital audio, and several performance improvements, such as higher coding efficiency, better handling of frequencies above 16 kHz, and indistinguishable quality from the original audio source.
2. It is used to create small digital audio files, handle higher and lower frequencies of sound.
3. The AAC file format gives better sound quality than MP3 at similar bit rates.
4. To convert an audio file from AAC to any other audio format, an audio converter is used.

ii. Audio Interchange File Format (AIFF) :

1. It refers to an audio file format to store high quality and multichannel sampled audio data.
2. This format is used for storing audio data for personal computers and other electronic audio devices.
3. AIFF uses 10 MB disk space for one minute of stereo audio at a sample rate of 44.1 kHz and a sample size of 16 bit.

iii. Audio File (Au) File Format :

1. It refers to a simple audio file format.
2. The Au file format *t* was header-less and supported only a simple 8-bit 4-law encoding at an 8000 Hz sample rate.

iv. Interchange File Format (IFF) :

1. It refers to a generic audio file format.
2. It helps to transfer the data between software produced by different companies.
3. An IFF file contains not only audio data, but also text, graphics, and games. The IFF files do not have any extension.

v. Media Playlist File Format (M3U) :

1. It refers to a file format that is used to store multimedia playlists.
2. It was first implemented in Winamp; however, it is now supported by applications, such as Window Media Player and RealPlayer.
3. An M3U file is a plain text file containing the paths of one or more media files.

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vi. Musical Instrument Digital Interface (MIDI) File Format :

1. It refers to a standard protocol that is used to interchange the musical information between various musical instruments, synthesizers, keyboard controllers, sound cards, and computers.
2. The MIDI file format is smaller than a digital audio file and offers cross-platform compatibility, which implies that all popular computer platforms can play MIDI files.

Que 2.35. Define video files. List the commonly used video file formats.

Answer

1. A video file is a collection of images that is displayed in a sequence representing scenes in motion.
2. Video files are also encoded or decoded using the various video codecs, such as DivX and Quicklime.
3. Following are the various commonly used video file formats :

i. Audio Video Interleave (AVI) File Format :

1. AVI files contain both audio and video data; thereby, allowing synchronous audio-with-video playback.
2. The AVI file format is also named as video for Windows. The file extension for the AVI file is .avi.

ii. MPEG Video File Format :

1. It refers to a video file format used for coding audio-visual information, such as movies and videos, in a digital compressed format.
2. As MPEG uses very sophisticated compression techniques, the size of its video files are much smaller than that of the other video and audio coding formats.
3. The drawback of the MPEG video files is that they are expensive to encode and slow to decompress.
4. The file extension for the MPEG file is .mpeg or .mpg.

iii. The Quicklime Movie (QT or MOV) File Format :

1. It refers to a video file format, which is a cross platform format.
2. It is capable of handling various formats of digital video, 3D models, sound, text, and animation.
3. This format is available for Mac OS classic (System 7 onwards), Mac OS X, and Microsoft Windows operating systems.
4. The latest version of Quicklime is X (10.0), and is currently available on Mac OS X 00.6.
5. The file extension for the Quicklime Movie file is .qt or .mov.

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iv. Windows Media Video (WMV) File Format :

1. Offers video data compression technology. WMV's designed to handle all types of video content.
2. The file extension for the WMV file is .wmv.

Que 2.36. Discuss about forms. What are the attributes of form elements ?

Answer

Forms :

1. A form is an area on a Web page that consists of plain text, HTML elements, and controls.
2. Plain text and HTML elements are used to structure the form; whereas, controls, which are also known as form fields, are used to make the form interactive by allowing a user to enter information.
3. A form is created by using the opening and closing tags of the FORM element.
4. These tags instruct the browser about the starting and ending points of a form.

The attributes of the FORM elements are :

i. **Action :** Refers to the Uniform Resource Locator (URL) of the program in the server that processes the form.

ii. **Autocomplete :** Enables the autocomplete feature in a form.

iii. **Accept-character :** Refers to the character set in the form that can be accepted by the server.

iv. **Enctype :** Specifies how the information in the form should be encoded before sending it to the server.

v. **Method :** Specifies how the information is sent from browser to server.

vi. **Name :** Refers to the name of the form.

vii. **Novalidate :** Specifies that the form should not validate while submitting.

viii. **Target :** Opens the action URL in the specified target, such as in the same window, in a new window, or in a new tab.

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D.A.

3 UNIT

Concepts of CSS

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PART-1

Concepts of CSS : Creating Style Sheet.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.1. **Describe CSS with its advantages.**

Answer

1. Cascading Style Sheet (CSS) is a language designed for describing the appearance of documents written in a markup language such as HTML.
2. CSS can control the color of text, the style of fonts, the spacing between paragraphs, column sizing and laid out, background images or colors used, and a variety of other visual effects.
3. CSS can be used by more than one page *i.e.*, the style of an entire website can be adjusted without having to change each page individually.
4. CSS is used to style web pages, and in combination with HTML or XHTML (which is used to describe content) and JavaScript (which is used to add interactivity to a site).

Advantages of using CSS :

1. The presentation of an entire website can be centralized to one or a handful of documents, enabling the look of a website to be updated at a moment's notice.
2. Browsers support multiple alternative style sheets, a feature that allows more than one design of a website to be presented at the same time.
3. Style sheets allow content to be optimized for more than one type of device.
4. Style sheets download quickly because web documents using CSS consume less bandwidth.
5. Users of a website can compose style sheets of their own, a feature that makes websites more accessible.

Que 3.2. **Discuss the three ways to insert CSS.**

Answer

Following are the three ways to insert CSS :

1. **External CSS :**
   i. External style sheet change the look of an entire website by changing one file.

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ii. Each HTML page must include a reference to the external style sheet file inside the <link> element, inside the head section.

iii. An external style sheet can be written in any text editor, and must be saved with a .css extension.

iv. The external .css file should not contain any HTML tags.

Example :

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="mystyle.css">
</head>
<body>
<h1>This is a heading</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

The "mystyle.css" file looks like :

"mystyle.css"

```
body {
background-color: lightblue;
}
h1 {
color: navy;
margin-left: 20px;
}
```

2. Internal CSS :

i. An internal style sheet is used if one single HTML page has a unique style.

ii. The internal style is defined inside the <style> element, inside the head section.

Example :

```
<html>
<head>
<style>
body {
background-color: linen;
```

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```
}
h1 {
color: maroon;
margin-left: 40px;
}
</style>
</head>
<body>
<h1>This is a heading.</h1>
<p>This is a paragraph.</p>
</body>
</html>
```

3. **Inline CSS :**
   i. An inline style is used to apply a unique style for a single element.
   ii. To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.

Example :

```
<html>
<body>
<h1 style="color:blue;text-align:center;">This is a heading</h1>
<p style="color:red;">This is a paragraph.</p>
</body>
</html>
```

Que 3.3. Describe the syntax of CSS.

Answer

1. Syntax can be defined as a rule that defines the structure or the order of the statements used in a programming language.
2. It specifies how words and symbols are put together to form statements and expressions.
3. CSS uses syntax to apply CSS rules in an HTML document. The CSS syntax is divided into two different parts :
   a. **Selector :** Selector defines as HTML element to which the CSS style is applied.
   b. **Declaration :** Declaration contains the CSS properties as well as the value of these properties.
4. The following code shows the syntax of a CSS document :

```
Selector
{
1st property : value ;
2nd property : value ;
3rd property : value ;
```

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```
    :
    Nth property : value ;
}
```

Que 3.4. What is a selector ? Explain different types of selector.

Answer

elector :

A selector is a pattern that is used to select an element to apply the CSS style rules.

2. Selectors can be used as a condition or a CSS rule to determine the elements that match with the selector.
3. The CSS rule is divided into two parts : selectors and declaration.
4. The declaration is a part that appears within the braces of the CSS rule followed by the selector.
5. The rules defined in the declaration part are applied to the elements specified by the selector.

Different types of selectors are as follows :

1. **The universal selector :**
   a. The universal selector selects all the elements that are present in an HTML document.
   b. We can use the selector to apply the same rule to all the elements of an HTML or XHTML document.
2. **The type selector :** The type selector matches all the elements specified in a list with the given value to determine the elements to which the CSS rules are to be applied.
3. **The class selector :** The class selector allows us to apply CSS rules to the elements that carry a class attribute whose value matches with the class attribute specified in the class selector.
4. **The ID selector :** The value of the id attribute is unique within a document. Therefore, the selector is applied only to the content of one element.
5. **The child selector :**
   a. The child selector matches the element that is an immediate child of another element.
   b. In the child selector, greater than symbol (>) is used as the combinator.
6. **The descendant selector :**
   a. The descendant selector matches an element that is a descendant of another element.
   b. A descendant element is an element that is nested inside another element.

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7. **The adjacent sibling selector :**
   a. The adjacent sibling selector selects all the elements that are adjacent siblings of a specified element.
   b. Sibling elements must have the same parent element.
   c. The word adjacent means side-by-side, or no other element could exist between the adjacent sibling elements.
8. **The attribute selectors :** The CSS attribute selector selects elements on the basis of some specific attributes or attribute values.
9. **The query selector :**
   a. The query selector ( ) and querySelectorAll ( ) methods accept CSS selectors as parameters and return the matching element node in the document tree.
   b. The querySelector ( ) method helps in querying the entire document or a specific element of the document.

PART-2

CSS Properties, CSS Styling (Background, Text Format, Controlling Fonts).

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.5. Explain the properties of CSS.

Answer

Properties of CSS are :

1. **Text properties :**

Property	Description	Values
color	Sets the color of a text	RGB, hex, keyword
line-height	Sets the distance between lines	normal, number, length, %
letter-spacing	Increase or decrease the space between characters	normal, length
text-align	Aligns the text in an element	left, right, center, justify
text-decoration	Adds decoration to text	none, underline, overline, line-through

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2. List properties :

Property	Description	Values
list-style	Sets all the properties for a list in one declaration	list-style-type, list-style-position, list-style-image, inherit
list-style-image	Specifies an image as the list-item marker	URL, none, inherit
list-style-position	Specifies where to place the list-item marker	inside, outside, inherit
list-style-type	Specifies the type of list-item marker	none, disc, circle, square, decimal, decimal-leading-zero, armenian, georgian, lower-alpha, upper-alpha, lower-greek, lower-latin, upper-latin, lower-roman, upper-roman, inherit

3. Border properties :

Property	Description	Values
border	Sets all the border properties in one declaration	border-width, border-style, border-color
border-bottom	Sets all the bottom border properties in one declaration	border-bottom-width, border-bottom-style, border-bottom-color
border-bottom-color	Sets the color of the bottom border	border-color
border-bottom-style	Sets the style of the bottom border	border-style
border-bottom-width	Sets the width of the bottom border	border-width

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4. Font properties :

Property	Description	Values
font	Sets all the font properties in one declaration	font-style, font-variant, font-weight, font-size/line-height, font-family, caption, icon, menu, message-box, small-caption, status-bar; inherit
font-family	Specifies the font family for text	family-name, generic-family, inherit
font-size	Specifies the font size of text	xx-small, x-small, small, medium, large, x-large, xx-large, smaller, larger, length, %, inherit
font-style	Specifies the font style for text	normal, italic, oblique, inherit
font-variant	Specifies whether or not a text should be displayed in a small-caps font	normal, small-caps, inherit

Que 3.6. Discuss about background of a web page.

Answer

1. Background of a web page is the area on which the content of the web page, such as text, tables, border and images, is displayed.
2. A web page should have a background that expresses the motto of the web page.
3. CSS provides various properties to set the background of a web page. These properties are as follows :
   - i. Background-color.
   - ii. Background-image.
   - iii. Background-repeat.
   - iv. Background-attachment.
   - v. Background-position.
   - vi. Background-clip.
   - vii. Background-origin.
   - viii. Background-size.
   - ix. Background-quantity.

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x. Background-spacing.

xi. Background.

Que 3.7. Describe the different properties to set the background of a web page.

Answer

Different properties to set background of a web page :

1. **The background-color property :**
   i. The background-color property is used to set the color of the background area on which an element is displayed.
   ii. The background-color property takes any of the following three values :
      a. Color name.
      b. Hexadecimal equivalence of the color.
      c. RGB color value.
2. **The background-image property :**
   i. This property is used to set an image in the background of an element.
   ii. The background-image property can virtually set background image for all elements.
   iii. The background-image property is specified using two values either url, to specify the image or none when no image is used.
3. **The background-repeat property :**
   i. This property allows us to tile the background images along x-axis and y-axis of an element.
   ii. This property is used along with the background-image property only.
   iii. The background-repeat property can take either of the following values :
      a. **repeat-x :** Tiles an image horizontally.
      b. **repeat-y :** Tile an image vertically.
      c. **repeat :** Tiles an image both horizontally and vertically.
      d. **no-repeat :** Does not tile an image.
4. **The background-attachment property :**
   i. This property is used to fix or scroll the background image along with the text and other content displayed on it.
   ii. This property takes either of the two values : fixed or scroll.
   iii. If the value is set to be fixed, the background image does not move with the text when the web page is scrolled.

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iv. If the value is set to be scroll, the background image scrolls along with the text written over it.

5. The background-position property :

i. This property sets the position of a background image on a web page.

ii. This property is used along with the background image property for :

a. Representing position in pixels.

b. Representing position in percentage.

c. Representing position by words, such as left, right and center, for *x*-axis; and top, down, and center for *y*-axis.

6. The background-clip property :

i. This property determines the background image extends into the border or not.

ii. It takes either the border-box or padding-box value.

iii. When we use the border-box value, the background image extends to the border value of the background-clip property.

7. The background-origin property :

i. This property is used to determine the starting position of the background image in a box like shape.

ii. This property allows to specify the starting point of the position of the background image.

iii. There are three values that can be specified with the background-origin property. These values are :

a. **Padding-box :** Specifies the position of the background image in relation to the outer edge of the padding or inner edge of the border.

b. **Border-box :** Specifies the position of the background image in relation to the outer edge of the border.

c. **Content box :** Specifies the position of the background image in relation to the outer edge of the content or inner edge of the padding.

8. The background-size property :

i. This property is used to specify the size of the image that is used as a background for an element.

ii. To specify the size use any of the following values :

a. **The auto keyword :** Sets the image to its original size.

b. **The length parameter :** Set an image of specified size in terms of height and width.

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c. **The percentage parameter :** Set the size of an image with respect to the specified height and width of the area in which the image has to be displayed.

9. **The background-quantity property :** This property is used to specify the number of times to repeat an image. It takes the following values :
   a. **The infinite keyword :** Repeats an image infinitely.
   b. **The integer parameter :** Repeats an image the specified number of times.

10. **The background-spacing property :**
   i. This property is used to specify the distance between the images that are repeated in the background of an element.
   ii. It takes the value to specify the horizontal and vertical space, related to the coordinates specified by the background-position property.

11. **The background property :**
   i. This property is the shortcut of specifying several background properties at the same place in a style sheet.
   ii. It can be used to specify the values for the background-color, background image, background-repeat, background-attachment, background-position, and background-size properties.

Que 3.8. Define font. Describe the different font families.

Answer

Font represents the style and size of the text that is displayed in a web browser. Apart from imparting a visual appeal to the content fonts are also used to help users to discriminate between different types of information.

The fonts are categorized under different font families as follows :

1. **Serif :**
   i. It refers to the font family in which the width of character is proportional, and the character are displayed with serifs.
   ii. Proportional width means each letter in the text has different width according to its height.
   iii. Some of the fonts that are included in this family are Times New Roman, Georgia, Book Antiqua, Bookman Old Style, Rockwell and Cambria.

2. **Sans-serif :**
   i. It refers to the font family in which the width of characters is proportional, but does not have serifs.
   ii. Some of the fonts that are included in this family are Microsoft Sans Serif, Verdana, Arial, Arial Black, Lucida Sans Unicode, Arial Narrow.

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3. **Cursive :**
   i. It refers to the font family in which characters appears as human hand writing.
   ii. Some of the fonts that are included in this family are Comic Sans MS, Monotype Corsiva, French Script MT, Mistral and Vivaldi.
4. **Fantasy :**
   i. It refers to the font family in which characters cannot be characterized under a single rule.
   ii. Some of the fonts included in this family are Impact, Papyrus, Copperplate Gothic Bold, Rockwell Extra Bold, Engravers MT, Juice ITC, Jokeman, Perpetua Titling MT, and Cooper Black.
5. **Monospace :**
   i. It refers to the font family in which characters resemble the text written with a type writer.
   ii. The characters are not proportional, which means, the width of each character is same.
   iii. Some of the fonts of family are Courier New, OCR A Extended, Consolas, Lucida Sans Typewriter, Terminal.

Que 3.9. **What are the font properties in CSS ?**

Answer

Following are the font properties used in CSS :

1. **The font-family property :**
   i. This property is used to specify the name of a font family to apply the specified font style on the text.
   ii. We can specify more than one font family in the font-family property, so that, if one font is not installed on the computer then the web browser can display the second specified font.
2. **The font-size property :**
   i. This property is used to change the size of the text.
   ii. The value of the font-size property is often specified in pixels. The font size can be specified in the following three different ways :
      a. **The absolute values :** It refers to the absolute size of the fonts. Absolute sizes are predefined fixed sizes that cannot be changed by a user.
      b. **The relative values :** It refers to the values that are not fixed value and are calculated on the basis of the current font values.
      c. **The percentage value :** We can also increase or decrease the font size of the text by specifying a percentage value in the

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font-size property. The percentage value is relative to the size of the parent element, which is the base value.

3. **The font-size-adjust property :**
   i. This property is used to change the aspect value of the text on a web page.
   ii. The aspect value is the ratio between the font height of a lowercase letter and the actual height of the font. This ratio is also known as the *x*-height.

4. **The font-stretch property :**
   i. This property is used to change the width of a font.
   ii. Using this property, we can condense or expand the width of the font byte specifying the values. Such as Ultra-condensed, extra-condensed, semi-condensed normal semi-expanded expanded extra-expanded, ultra-expanded.

5. **The font-style property :**
   i. This property is used to specify the style of the font.
   ii. The possible values of the font style property are normal, italic, and oblique.

6. **The font-variant property :**
   i. This property is used to display a font as normal or in small-caps.
   ii. When we set the font-variant property of a font to small-caps, the font written in lowercase displays in the smaller version of the uppercase letters.

7. **The font-weight property :**
   i. This property is used to specify the weight of the font, such as the font boldness or thickness.
   ii. Font weight is a term used to signify the extent of boldness or thickness assigned to a character, when a particular font is applied to it.

8. **The font property :**
   i. Instead of defining all the properties, such as font-style, font-weight and font-style, separately, we can specify the value of all these properties in the font property.

Que 3.10. **Discuss about web font.**

Answer

1. Web font is a feature that allows us to write text in fonts other that those existing in the system.
2. This feature eliminates the restriction of using the limited number of fonts that are installed on the computer.

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3. We can also use the fonts that are available online by specifying their Uniform Resource Location (URL) in the style sheet.
4. The following is the syntax for defining the web font in the style sheet :

```
@font-fact{
font-family: <name>
src : <source>
}
```

Que 3.11. How will you apply CSS to text ?

Answer

CSS can be applied to the text using :

1. **Color :** Specifies the color of the text in a web page. The value of the color property can be name of the color or the hex code for the color, such as #ff0000 is the hex code of red color.
2. **Letter spacing :** Specifies the space between characters.
3. **Line break :** Defines a set of line breaking rules to be used with text.
4. **Line-height :** Specifies the height of a line.
5. **Punctuation-trim :** Specifies whether to trim the punctuation marks at the start or at the end of a line.
6. **Text-align-last :** Specifies the alignment of the last line of a text. The possible values are start, end, centre, left, right, justify, and size.
7. **Text-autospace :** Controls the left and right side spacing of the text.
8. **Text-emphasis-color :** Specifies the color of the emphasis mark on the text of an element.
9. **Text-emphasis :** Provides the emphasis mark on the text of an element. In this property, we can define the style and color of the emphasis mark.
10. **Text-outline :** Provides an outline on the text.

PART-3

Working with Block Elements and Object, Working with List and Tables, CSS Id and Class.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.12. Explain the working with block elements and objects.

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Answer

All the HTML elements are categorized as :

1. **Block level elements :**
   a. A block-level element always starts on a new line and stretches out to the left and right as far as it can.
   b. The element is a block-level element. The tag plays important role in grouping various other HTML tags and applying CSS on group of elements.
   c. Even now tag can be used to create webpage layout where we define different parts (Left, Right, Top etc.), of the page using tag.
   d. This tag does not provide any visual change on the block but this has more meaning when it is used with CSS.

Example : Following is a simple example of tag :

```
<html>
<head>
<title>HTML div Tag</title>
</head>
<body>
<!– First group of tags –>
<div style = “color:red”>
<h4>This is first group</h4>
<p>Following is a list of vegetables</p>
<ul>
<li>Beetroot</li>
<li>Ginger</li>
<li>Potato</li>
<li>Radish</li>
</ul>
</div>
<!– Second group of tags –>
<div style = “color:green”>
<h4>This is second group</h4>
<p>Following is a list of fruits</p>
<ul>
<li>Apple</li>
```

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```
<li>Banana</li>
<li>Mango</li>
<li>Strawberry</li>
</ul>
</div>
</body>
</html>
```

2. **Inline elements :**
   a. An inline element is the opposite of the block-level element.
   b. It does not start on a new line and takes up only necessary width.
   c. The tag is an inline element and it can be used to group inline-elements in an HTML document.
   d. This tag also does not provide any visual change on the block but has more meaning when it is used with CSS.
   e. tag is used with inline elements whereas the tag is used with block-level elements.

Example : Following is a simple example of tag :

```
<html>
<head>
<title>html span Tag</title>
</head>
<body>
<p>This is <span style = "color:red">red</span> and this is
<span style = "color:green">green</span></p>
</body>
</html>
```

Que 3.13. Define list and tables.

Answer

1. Depending on the order in which the items of a list are arranged, the list can be categorized as unordered or ordered.
2. The items in an ordered list are arranged in a sequential or logical order; that is why, this list is also called a sequential list.
3. There is not specific sequence or order to place items in an unordered list. In HTML, ordered lists are marked with number or letters; whereas, unordered lists are marked with different types of images or bullets.

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4. All these symbols, number, and letter with which the items of a list are marked are known as list item markers.
5. HTML also provides Cascading Style Sheet (CSS) that allows to set various list-style properties to define the style of the list item markers for both ordered and unordered lists.
6. These list style properties are list-style-type, list-style-image, and list-style-position.
7. We can customise the appearance and layout of a table using Cascading Style Sheet (CSS) in HTML.
8. CSS is a style sheet language that allows to define a layout pattern for the content of a web page, it defines or set how different types of content, such as paragraph, lists, or tables will be displayed in a web browser.
9. CSS is supported by almost all the web browsers, such as internet explorer, Mozilla Firefox, and Netscape.
10. The advantages of using CSS is that by changing a single CSS file, we can completely change the appearance or layout of all the web pages of the web site.
11. CSS provides various properties, such as table-layout, border-collapse, and caption-side, which help to perform various tasks, such as aligning the table content customizing the border of the table and changing the position of the table caption.

Que 3.14. Describe various properties of list.

Answer

Various properties of list :

i. The list-style type property :

1. The list-style-type property is used to modify the default appearance of list markers in HTML list structure.
2. The following is the syntax to use the list-style-type property :

   list-style-type : <glyph> | <algorithmic> | <symbolic>

   The description of the syntax is as follows :

   <glyph> : Includes values that insert their corresponding symbols for an unordered list.

   <algorithmic> : Includes values that displays their corresponding symbols for an ordered list.

   <symbolic> : Includes the values, asterisks and footnotes, where asterisks show the symbols in an increasing order (*, **, ***, ****, ...) and footnotes show the (*, □, A, A, ...) symbols.

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ii. The list-style-image property :

1. In CSS, we can use an image as a list item marker. The image used as a list item marker should be smaller in size than the size of the list item.
2. We can use an image as a list item marker for both ordered and unordered lists.
3. We need to give the Uniform Resource Locator (URL) of the image that we want to use as a list item marker in the list-style-image property.
4. The syntax used to declare the list-style-image property is as follows :

   life-style-image : <url> | none ;

   In the syntax, <url> indicates the URL source for the list-marker graphic; whereas, none specifies that not list marker is used for the list item.

iii. The list-style-position property :

1. The list-style-position property is used to specify the position of a list item marker in a list. This property takes inside or outside values.
2. The inside value indents the marker in the inside direction with context to the other elements of the HTML document.
3. The outside value displays the marker to the outside or left of the list item. The default value of the list-style-position property is outside.
4. The syntax used to specify the position of a list item marker using the list-style-position property is as follows :

   list-style-position : inside | outside ;

iv. The list-style shorthand property :

1. The list-style shorthand property is used to modify the default display characteristics of list markers in HTML list structures.
2. It is used to provide the value for the list-style-type, list-style-image and list-style-position properties.
3. The following code shows the list-style property :
   ul {list-style : outside url(http://www.abc.com.picture.gif)}

Que 3.15. Describe the properties of tables.

Answer

Following are the properties of table :

i. The table-layout property :

1. The table-layout property specifies the way in which a table should be displayed in a web browser.

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2. In CSS, the table-layout property allows flexibility in positioning the tables, which means that we can easily move and place tables at different location throughout the web page.
3. Using the table-layout property also decreases the loading time of the table, allowing the main content to appear before the graphics.
4. The following syntax shows an example of specifying the table-layout property in a table :

```
table{
table-layout: auto;
}
```

5. In this syntax, the value of the table-layout property has been set to auto. This implies that table cells would automatically be resized according to the amount of content placed in them.

ii. The caption-side property :

1. The caption-side property is used to specify the position of a table caption.
2. A table caption is a short description that is provided with a table, specifying its number, the number of the caption it belongs to, and the information that it is imparting.
3. We can use the caption-side property to display the table caption on the top as well as at the bottom of the table.
4. The following syntax shows an example of specifying the caption-side property in a table :

```
table{
caption-side: bottom;
}
```

5. In this syntax, the value of the caption side property is bottom, indicating that the table caption appears below the table.

iii. The border-collapse property :

1. The border-collapse property allows to define a way in which a border should be displayed around a table cell.
2. To display the border of the table in different styles, we need to set the appropriate values of the border-collapse property.
3. The following syntax shows an example of applying the border-collapse property in a table :

```
table {border-collapse: separate;}
```

4. In this syntax, the value of the border-collapse property is set to separate. This allows us to set different borders for all the cells of a table.

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iv. The border-spacing property :

1. The border-spacing property allows to specify the amount of space between the border of adjacent table cells.
2. The amount of space between the borders of adjacent cells is known as border space.
3. The syntax of the border spacing property is as follows :

   border-spacing : 10px 50px;
4. In this syntax, the border spacing property takes two values, 10 pixels and 50 pixels. The first value specifies the horizontal spacing and the second value specifies the vertical spacing.

v. The empty-cell property :

1. A cell that does not contain any content is known as an empty cell.
2. The empty cells property is used to define the border of an empty cell.
3. The syntax of the empty cells property is as follows :

   table {empty-cells : show;}
4. In this syntax, the value of the empty-cell property is set to show. This indicates that the border is displayed around the empty cells.

Que 3.16. Write short note on CSS Id and Class.

Answer

CSS Id :

1. The CSS Id selector matches an element based on the value of its id attribute.
2. In order for the element to be selected, its Id attribute must match exactly the value given in the selector.
3. Following is the syntax used for CSS Id :

   #id_value { style properties }

   This is equivalent to the following attribute selector :

   [id=id_value] { style properties }

   Example :

```
#identified {
background-color: skyblue;
}
```

CSS class :

1. The CSS class selector matches elements based on the contents of their class attribute.
2. Following is the syntax used for CSS class :

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.class_name { style properties }

This is equivalent to the following attribute selector :

[class~=class_name] { style properties }

Example :

```
.red {
color: #f33;
}
.yellow-bg {
background: #ffa;
}
.fancy {
font-weight: bold;
text-shadow: 4px 4px 3px #77f;
}
```

PART-4

Box Model(Introduction, Border Properties, Padding Properties, Margin Properties).

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.17. Explain box model and its dimensions.

Answer

1. CSS treats an HTML document as a hierarchical tree of elements, where each element can have zero or more child elements arranged in an ordered way.
2. The topmost element of this tree is called as the root element or the parent element. These elements display their content at a specific position, which is defined by using CSS properties.
3. CSS converts the data of HTML elements in the form rectangular boxes, by using a layout model, called the box model, to set the design and layout of HTML documents.
4. This means that the box model determines how HTML elements are displayed as boxes.
5. The box model allows placing a border around the elements and also provides space between elements.

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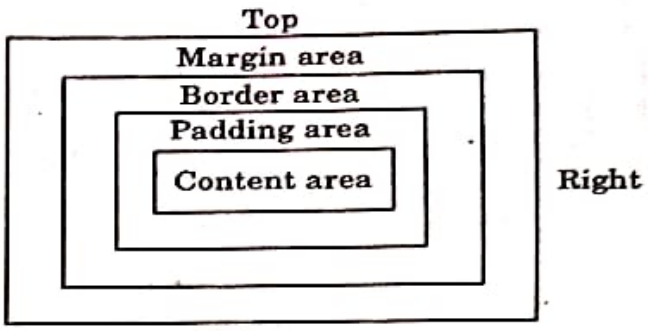

Fig. 3.17.1.

6. Following are the areas of a box, shown in Fig. 3.17.1 :
   - **i. Content area :**
     - a. Displays the content of a document, such as text and images.
     - b. This is bounded by a rectangle, which is called as the content edge.
     - c. The content area always appears inside the padding area.
   - **ii. Padding area :**
     - a. Specifies the area around the content area. This is bounded by the padding edge.
     - b. Outside the padding is the border area and the outside boundary of that area is the border edge.
     - c. Outside the border is the margin area whose outer edge is called the margin edge.
   - **iii. Border area :** Specifies the area around the padding area. This is bounded by the border edge.
   - **iv. Margin area :** Specifies the area around the border area. This is bounded by the margin edge.
7. A box model includes the following types of boxes :
   - **i. Block-level box :** Represents a box to show a paragraph.
   - **ii. Line box :** Represents a box to show a line of text.
   - **iii. Inline-level box :** Represents a box to show the words of a line.

Box dimensions :

1. All HTML elements in a box model are represented as rectangular boxes.
2. The dimensions of the box model are calculated by using the height and width of the content area that gets applied to the content.
3. Each box is associated with a content area and many optional areas, such as padding, border, and margin.
4. The size of each area is specified by using the box model dimensions shown in Fig. 3.17.2.

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...is is equivalent ... selector :

[class~=class_name] { style properties }

Example :

```
.red {
color: #f33;
}
.yellow-bg {
background: #ffa;
}
.fancy {
font-weight: bold;
text-shadow: 4px 4px 3px #77f;
}
```

PART-4

Box Model(Introduction, Border Properties, Padding Properties, Margin Properties).

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.17. Explain box model and its dimensions.

Answer

1. CSS treats an HTML document as a hierarchical tree of elements, where each element can have zero or more child elements arranged in an ordered way.
2. The topmost element of this tree is called as the root element or the parent element. These elements display their content at a specific position, which is defined by using CSS properties.
3. CSS converts the data of HTML elements in the form rectangular boxes, by using a layout model, called the box model, to set the design and layout of HTML documents.
4. This means that the box model determines how HTML elements are displayed as boxes.
5. The box model allows placing a border around the elements and also provides space between elements.

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wing are the possible values of the margin property :
) : Defines margin.
th : Defines a fixed margin in px, pt, and cm. The default of this property is 0px.
fines margin in percentage. The value of margin is the height nearest block.
t : Defines that margin should be inherited from the parent

; code shows the specification of margin properties in the

```
;
%;
to;
15px;
000000;
```

ttom and left values of a margin can be changed sing different properties such as margin-top, margin-m, and margin-left.
1 property is used to change all the properties of value of margin properties range between one and

PART-5

ping, Dimension, Display, Positioning, Class, Navigation Bar, Image Sprites, Attribute Sector).

tions-Answers

Medium Answer Type Questions

ced grouping and dimension.

used to reduce code redundancy and code.

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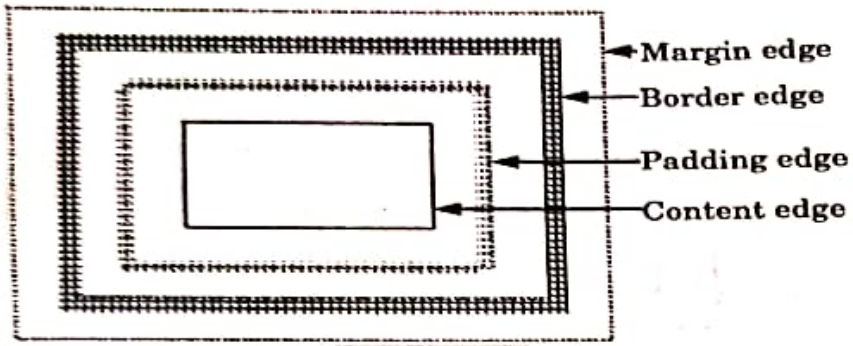

Fig. 3.17.2.

5. In Fig. 3.17.2, the perimeter of the content, padding, border, and margin is called an edge. Each box in the box model has the following four edges :

i. The content edge :

a. Surrounds a rectangle specified by the width and height of the box. This also called the inner edge.

b. The four content edges represent the content area of the box.

ii. The padding edge :

a. Surrounds the padding box. If the padding has 0 width, the padding edge becomes a content edge.

b. The four padding edges represent the padding area of the box.

iii. The border edge :

a. Surrounds the border of the box. If the border has 0 width, the border edge becomes a padding edge.

c. The four border edges represent the border area of the box.

iv. The margin edge :

a. Surrounds the margin of the box. If the border has 0 width, the margin edge becomes a border edge.

b. The margin edge is also called as outer edge. The four border edges represent the margin area of the box.

Que 3.18. Explain the term border. Describe the border properties in detail.

Answer

1. The border specifies a space between the padding and content in the box model.
2. The border properties in CSS define the width, color, and style of border area of the box.

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3. This property can also set the style, width and color of the border property in one declaration.
4. The syntax to set the border is as follows :

   border 1px double value;

Properties of border :

1. **The border-width property :** This property specifies the width of the border area. The width is specified in pixels. The syntax to set the border-width property is as follows :

   border-width: value;

   The width of different sides of the border is set with the help of the following properties :

   a. **The border-top-width property :** Sets the width of the top border of an element. Negative values are not allowed in this property.

   b. **The border-right-width property :** Sets the width of the right border of an element. Negative values are not allowed in this property.

   c. **The border-bottom-width property :** Sets the width of the bottom border of an element. Negative values are not allowed in this property.

   d. **The border-left-width property :** Sets the width of the left border of an element. Negative values are not allowed in this property.

2. **The border-color property :** The border-color property specifies the color of the border. The border-color attribute in this property adds color to border. Border colors are defined using one of the following values :

   a. **Name :** Defines the name of the color, such as red and blue.

   b. **Red Green Blue (RGB) :** Defines a RGB value, such as rgb (100,0,0).

   c. **Hex :** Specifies a hex value, such as #00ff00.

   The syntax of the border-color property is as follows :

   border-color: value;

   Different properties of the border-color property are :

   a. **The border-top-color :** Sets the color of the top border of an element. Negative values are not allowed in this property.

   b. **The border-right-color :** Sets the color of the top border of an element. Negative values are not allowed in this property. If the border-right-color does not specify any border-color value, then the value of the color property is used instead.

   c. **The border-bottom-color :** Sets the color of the bottom border of an element. Negative values are not allowed in this property. If the border-bottom-color specifies a no border-color value, then the value of the color property is used instead.

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d. **The border-left-color :** Sets the color of the left border of an element. Negative values are not allowed in this property. If the border-left-color does not specify any border-color value, then the value of the color property is used instead.

e. **The border-color shorthand property :** Refers to the shorthand form of border-top, border-right, border-bottom, and border-left properties. The border-color property values range from one to four. If a single value is provided, it is applied to all sides of the box.

4. **The border-style property :** This property indicates the format of the border, such as solid, dashed, or double. The syntax to set the border-style property is as follows :

   border-style: value;

   The border-style property can be used with four directions, top, bottom, left and right, which are given as follows :

   a. **The border-top style :** Sets the style of the top border of an element.

   b. **The border-right style :** Sets the style of the right border of an element.

   c. **The border-bottom style :** Sets the style of the bottom border of an element.

   d. **The border-left style :** Sets the style of the left border of an element.

   e. **The border-style shorthand :** Sets the same width, style, and color on all border of an element.

5. **The border shorthand property :** This property is used to specify all the border related properties into one property. The border shorthand property can be divided into the following five parts :

   a. **The border-top :** Sets the width, style, and color of the top border of an element.

   b. **The border-right :** Sets the width, style, and color of the right border of an element.

   c. **The border-bottom :** Sets the width, style, and color of the bottom border of an element.

   d. **The border-left :** Sets the width, style, and color of the left border of an element.

   e. **The border-shorthand :** Sets the same width, style, and color on all borders of an element.

6. **The border-radius property :** This property is used to give round corners to a box like shape. To use the border-radius property, we need to specify the position of the corner of a box that is required to be in a round shape. Following properties are used to create round corners :

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a. **Border-top-left-radius :** Specifies a round corner in the top left direction of a border.

b. **Border-top-right-radius :** Specifies a round corner in the top right direction of a border.

c. **Border-bottom-left-radius :** Specifies a round corner in the bottom left direction of a border.

7. **The border-image property :** This property enables to insert image in border edges and border corners. These properties do not affect the layout of a box and its content. The border-image properties include the following properties :

a. **Border-image-source :** Specifies an image instead of using a border.

b. **Border-image-slice :** Specifies inward offsets from the top, right, bottom, and left edges of an image.

c. **Border-image-width :** Specifies the width of an image used for the border.

d. **Border-image-outset :** Specifies the value for the border image area that can be extended beyond the border box on the top, right, bottom, and left sides, respectively.

e. **Border-image-repeat :** Specifies that the images for the sides and the middle part of the border image are scaled and tiled.

f. **Border-image shorthand :** Specifies a shorthand property to set the border-image-source, border-image-slice, border-image-width, border-image-outset, and border-image-repeat properties.

8. **The box-shadow property :** This property is used to attach one or more shadows to a box.

The description of the preceding syntax is given as follows :

a. **None :** Specifies that no shadow is attached.

b. **First<length> parameter :** Specifies the horizontal offset of the shadow.

c. **Second<length> parameter :** Specifies the vertical offset of the shadow.

d. **Third<length> parameter :** Specifies the blur radius.

e. **The<color> parameter :** Specifies the color of the shadow.

Que 3.19. Discuss about padding properties of box model.

Answer

1. Padding (space) in the box model specifies the distance between the border of an element and the content within it. The padding is affected by the background color of an element.

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2. The value of padding cannot be negative.
3. The shorthand property in padding is used to change all the padding properties, such as padding top, padding bottom, padding right, and padding left at once.
4. The syntax used to set padding properties is as follows :

   padding : value;
5. Padding can be set according to the following values :
   a. **Length :** Specifies fixed padding in the pt and cm units.
   b. **Percentage :** Specifies padding in percentage with respect to the width of a parent block.
   c. **Auto :** Specifies default padding from the top, bottom, left or right direction.

   The following code shows the specification of padding properties in the box model :

```
#container {
padding-top: 7px;
padding-left: 25%;
padding-right: auto;
padding-bottom: 45px;
border: 2px solid 000000;
}
```

In the preceding code snippet, we can see the following four properties :

a. Padding-top
b. Padding-bottom
c. Padding-right
d. Padding-left

Que 3.20. **Discuss about margin properties of box model.**

Answer

1. The blank area around the border of an element is called margin. It is used to create an extra space around an element.
2. It is completely transparent and does not contain any background color.
3. Margin is also used to determine the spacing around different elements.
4. The margin property is used to set all the sides of an element, such as top, right, bottom, and left.
5. The syntax to set the margin property is as follows :

```
P
{
margin: value;
}
```

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6. The following are the possible values of the margin property :
   a. **Auto :** Defines margin.
   b. **Length :** Defines a fixed margin in px, pt, and cm. The default value of this property is 0px.
   c. **% :** Defines margin in percentage. The value of margin is the height of the nearest block.
   d. **Inherit :** Defines that margin should be inherited from the parent element.
7. The following code shows the specification of margin properties in the box model :

```
#container
{
margin-top: 7px;
margin-left: 25%;
margin-right: auto;
margin-bottom; 45px;
border: 2px solid 000000;
}
```

8. The top, right, bottom and left values of a margin can be changed independently by using different properties such as margin-top, margin-right, margin-bottom, and margin-left.
9. A shorthand margin property is used to change all the properties of margin at once. The value of margin properties range between one and four.

PART-5

CSS Advanced (Grouping, Dimension, Display, Positioning, Floating, Align, Pseudo Class, Navigation Bar, Image Sprites, Attribute Sector).

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.21. **Discuss CSS advanced grouping and dimension.**

Answer

Grouping :

1. Grouping in CSS is a technique used to reduce code redundancy and write clean, concise easy to follow code.

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2. There are many instances in which multiple CSS selectors will have the same declarations.
3. In these cases, we can group all the selectors together and write the declarations only one time.
4. For example, if we want to apply the exact same font size and color to three different headings we can write it as shown below. However, this is a waste of space :

```
h1{
    font-size : 10px;
    color : green;
}
h2{
    font-size : 10px;
    color : green;
}
h3{
    font-size : 10px;
    color : green;
}
```

5. Instead we can shorten the code by grouping it.
6. Since all three headings have the exact same declarations, we can write the three heading selectors separated by a comma and write each declaration one time reducing three blocks of code to one.
7. The more declarations we have that are the same for different selectors, the more space we can save by condensing it using grouping.
8. Make sure not to put a comma after the last selector as it will render the code block useless.

```
h1, h2, h3 {
    font-size : 10px;
    color : green;
}
```

Dimension :

Dimension is defined as the border that surrounds every box *i.e.*, element, the padding that can appear inside each box and the margin that can go around them.

Following properties allow us to control the dimensions of a box :

1. **The height and width properties :** The height and width properties allow us to set the height and width for boxes. They can take values of a length, a percentage, or the keyword auto.
2. **The line-height property :** The line-height property allows us to increase the space between lines of text. The value of the line-height property can be a number, a length, or a percentage.

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3. **The max-height property :** The max-height property allows us to specify maximum height of a box. The value of the max-height property can be a number, a length, or a percentage.
4. **The min-height property :** The min-height property allows us to specify minimum height of a box. The value of the min-height property can be a number, a length, or a percentage.
5. **The max-width property :** The max-width property allows us to specify maximum width of a box. The value of the max-width property can be a number, a length, or a percentage.
6. **The min-width property :** The min-width property allows us to specify minimum width of a box. The value of the min-width property can be a number, a length, or a percentage.

Que 3.22. How to control the display of an element using CSS ?

Answer

Controlling the display of an element using CSS :

1. CSS allows to control the display of an HTML element by using the display an visibility properties. The display property specifies how to display and element, while the visibility property specifies whether the element should be visible or hidden.
2. The following code snippet shows the use of display property :

   h1 {display: none;}
3. The following code snippet shows the use of visibility property :

   p {visibility: visible;}
4. CSS also allows to display the content of an HTML element as inline or in blocks. When we display the content of an element as block, then it takes the full width of a web page and is preceded and followed by a line break.

   p {display: block;}
5. The inline element does not have any line break associated with it. Some examples of inline elements are SPAN and A. The following code snippet shows how to define as inline element :
   a {display : inline;}
6. The display property is used to display an element in a specified manner. It generates a particular type of box of an element. This property takes different values, in which inline, block, and none are the most common.
7. The visibility property specifies whether an element is visible on a web page or not. It takes four values : visible, hidden, collapse and inherit.

Que 3.23. How to position an element in CSS ?

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Answer

1. CSS provides a property, position which controls the position of elements with respect to the normal flow of the content on a web page.
2. We can apply the position property on any HTML element, such as P, DIV, TABLE, FORM and TEXTAREA. The syntax to use the position property is given as follows :

   Position: [value];
3. The position property takes the following values :
   a. **Relative :** Specifies relative position of an element with respect to the normal flow the content.
   b. **Absolute :** Specifies the position of a block element with respect to the normal flow of the content.
   c. **Fixed :** Fixes the position of an element with respect to the normal flow of the content.
   d. **Static :** Specifies the normal position of an element.
   e. **Inherit :** Specifies that an element uses the same settings of position as of its parent element.
4. CSS provide properties that specify the offset position of an element with respect to the normal flow of the content of a web page. These properties are given as follows :
   a. **Top :** Offset an element in the top direction of a web page.
   b. **Bottom :** Offset an element in the bottom direction of a web page.
   c. **left :** Offset an element in the left direction of a web page.
   d. **right :** Offset an element in the right direction of a web page.

Positioning of an element :

i. **Fixed positioning :**
   1. The fixed value of the position property is used to set the fixed position for an element. It keeps an element fixed with respect to the remaining content of the web page.
   2. An element assigned with fixed positioning does not change its position when the web page is scrolled. This types of positioning is often used when a fixed header of footer needs to be specified in each page of website irrespective of the scrolling of the page.
   3. This is used to create a frame whose header and side bar are kept constant and the remaining content keeps changing on scrolling.

ii. **Relative positioning :**
   1. The relative value of the position property is used to set the relative position of an element with respect to the content of its parent element.
   2. Relative positioning defines a new coordinate system for child elements, with the origin located at the position where the first child element is rendered.

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iii. Absolute positioning :

1. The absolute value of the position property is used to set the absolute position of an element with respect to the content of its parent element.
2. An absolutely positioned element and its parent element are placed independently.
3. The layout of each absolutely positioned element is independent of other element. By default an absolutely positioned element is placed just above (in *z*-space coordinate) its parent element.

Que 3.24. In CSS, how we can float an element ?

Answer

1. CSS allows us to implement the text wrap feature in a web page by using the float property.
2. This property makes an HTML element as a floated element and defines the side where other elements are displayed.
3. The syntax to use the float property is given as follows :

   Float : [value];
4. The float property supports the following values :
   a. **Left :** Floats an element to the left with respect to the content.
   b. **Right :** Floats an element to the right with respect to the content.
   c. **None :** Does not float an element.
   d. **Inherit :** Floats an element using the same float settings as specified for its parent element.

Que 3.25. Explain the alignment used in CSS.

Answer

CSS layout :

1. **Center align elements :**

   To horizontally center a block element (like), use margin: auto;

   Setting the width of the element will prevent it from stretching out to the edges of its container.

   The element will then take up the specified width, and the remaining space will be split equally between the two margins:

   Example :

```
.center {
margin: auto;
width: 50%;
border: 3px solid green;
```

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```
padding: 10px;
}
```

2. **Center align text :**

To center the text inside an element, use text-align: center;

Example :

```
.center {
text-align: center;
border: 3px solid green;
}
```

3. **Center an image :**

To center an image, set left and right margin to auto and make it into a block element :

Example :

```
img {
display: block;
margin-left: auto;
margin-right: auto;
width: 40%;
}
```

4. **Left and right align :**

i. **Using position :**

One method for aligning elements is to use position: absolute;

Example :

```
.right {
position: absolute;
right: 0px;
width: 300px;
border: 3px solid #73AD21;
padding: 10px;
}
```

ii. **Using float :**

Another method for aligning elements is to use the float property :

Example :

```
.right {
float: right;
width: 300px;
border: 3px solid #73AD21;
padding: 10px;
}
```

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5. Center vertically :

i. Using padding :

There are many ways to center an element vertically in CSS. A simple solution is to use top and bottom padding :

Example :

```
.center {
padding: 70px 0;
border: 3px solid green;
}
```

ii. Using line-height :

Another trick is to use the line-height property with a value that is equal to the height property.

Example :

```
.center {
line-height: 200px;
height: 200px;
border: 3px solid green;
text-align: center;
}
/* If the text has multiple lines, add the following: */
.center p {
line-height: 1.5;
display: inline-block;
vertical-align: middle;
}
```

iii. Using position and transform :

If padding and line-height are not options, a third solution is to use positioning and the transform property :

Example :

```
.center {
height: 200px;
position: relative;
border: 3px solid green;
}
.center p {
margin: 0;
position: absolute;
top: 50%;
left: 50%;
transform: translate(– 50 %, – 50 %);
}
```

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Que 3.26. Discuss about pseudo classes. Write down the common categories of pseudo class in CSS.

Answer

1. Pseudo classes are predefined classes that enable to apply certain styling rule on specific states of an element.
2. These classes allow to style visited or unvisited links, or to specify how the links are rendered in response to user actions.
3. Pseudo-element refers to sub-parts of element, such as the first letter of a paragraph.
4. Pseudo classes and Pseudo-element allow us to style the first line of a paragraph and first letter of a word.
5. The pseudo-classes are used to add special effects to the selectors, such as changing the color of visited links.
6. The selectors are the names given to different styles. A pseudo-class always starts with a colon (:).
7. The syntax to define a pseudo-class is as follows :

   element: pseudo-class {property: value;}

Common categories of pseudo-classes in CSS are given as follows :

1. **Dynamic pseudo classes :**
   - i. Dynamic pseudo-classes provide various types of special effects to the element of HTML.
   - ii. These classes represent the state of links as unvisited, visited, or currently selected.
   - iii. Dynamic pseudo-classes also enable to activate the HTML elements or apply a specified style to an element when the mouse pointer is kept over it.
     - a. **Link :** Applies styles to unvisited links.
     - b. **Visited :** Applies styles to visited links.
     - c. **Hover :** Applies styles to an element over which the mouse-pointer moves.
     - d. **Active :** Applies styles to an active element.
     - e. **Focus :** Applied styles to an element during the period it has user focus.
2. **Target pseudo-class :**
   - i. The target category of pseudo-class includes one class only, that is, : target.
   - ii. The : target pseudo-class is used to specify a target element.
   - iii. When we create a web page, it may contain a Uniform Resource Identifier (URI) that refers to a location within a resource.

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iv. This kind of URI ends with # followed by a number sign, which is also known as an anchor identifier of fragment identifier.

v. The URIs with fragment identifiers always link to a particular element within an HTML document and such element is known as the target element.

3. **Language pseudo-class :**

i. The language category of pseudo-class includes one class only, that is : lang. The : lang pseudo-class is used to specify a language to be used in a specific element.

ii. It is used in an HTML document that uses different languages.

4. **UI element states pseudo-classes :**

i. The UI element states pseudo-classes enables to specify the appearance of UI element, such as buttons and check boxes.

a. **Enabled :** Represents an element of UI that is in the enabled state, for instance a menu option.

b. **Disabled :** Represents an element of UI that is in the disabled state, for instance a menu option.

c. **Checked :** Represents the selected states of radio and checkbox elements.

d. **Indeterminate :** Represents the undetermined states of radio and checkbox elements. Sometimes these elements are neither checked nor unchecked because of an element attribute, or Document Object Model (DOM) manipulation.

5. **Structural pseudo-classes :**

i. Structural pseudo-classes allow the selection of elements on the basis of the structure of the entire HTML document, which includes the position of each element and number of times the occurrence of an element in the document.

ii. A browser treats an HTML documents as a tree of nodes, where nodes are represented by elements and their child elements.

iii. Structural pseudo-classes allow to select these nodes and calculate the position of a child node in the node list of a parent node or element :

a. **Root :** Selects the root element of a document.

b. **nth-child(N) :** Selects the elements on the basis of their position within the child elements of a parent element.

c. **nth-last-child (N) :** Selects the elements just as the :nth-child(N) pseudo-class selects but starts the counting from the last child and counts backwards.

d. **nth-of-type (N) :** Selects the element on the basis of their position and type within the child elements of a parent element.

e. **first-child :** Selects the first child element of its parent element.

f. **first-of-type :** Selects the first child element of the specified element type.

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6. **Negative pseudo-class :**
   i. The negation pseudo-class, : not, is used to select an element and negative the style that is applied to the element.
   ii. Some example of using the : not pseudo class are given as follows :
   button : not([Disabled]) /*Example 1*/
   *: not(P) /*Example 2*/
   html | *:not(: link) : not(: visited) /*Example 3*/

Que 3.27. Discuss Navigation bar, image, sprites, attribute sector.

Answer

Navigation Bar :

1. A navigation bar needs standard HTML as a base.
2. A navigation bar is basically a list of links, so we will use the <ul> and <li> elements :

Example :

```
<ul>
<li><a href="default.asp">Home</a></li>
<li><a href="news.asp">News</a></li>
<li><a href="contact.asp">Contact</a></li>
<li><a href="about.asp">About</a></li>
</ul>
```

3. Now, remove the bullets and the margins and padding from the list :

Example :

```
ul {
list-style-type: none;
margin: 0;
padding: 0;
}
```

Example explanation :

i. **list-style-type: none :** Removes the bullets. A navigation bar does not need list markers

ii. **Set margin: 0; and padding: 0 :** To remove browser default settings

1. **Vertical navigation bar :** To build a vertical navigation bar, we can style the <a> elements inside the list, in addition to the code above :

Example :

```
li a {
display: block;
width: 60px;
}
```

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Example explanation :

i. **display: block; :** Displaying the links as block elements makes the whole link area clickable (not just the text), and it allows us to specify the width (and padding, margin, height, etc., if we want)

ii. **width: 60px; :** Block elements take up the full width available by default. We want to specify a 60 pixels width.

2. **Horizontal navigation bar :** There are two ways to create a horizontal navigation bar. Using inline or floating list items :

i. **Inline list items :**

To build a horizontal navigation bar specify the <li> elements as inline, in addition to the "standard" code above:

Example :

```
li {
display: inline;
}
```

Example explanation :

a. **display: inline; :** By default, <li> elements are block elements. Here, we remove the line breaks before and after each list item, to display them on one line.

ii. **Floating list items :**

To create a horizontal navigation bar, float the <li> elements, and specify a layout for the navigation links :

Example :

```
li {
float: left;
}
a {
display: block;
padding: 8px;
background-color: #dddddd;
}
```

Example explanation :

a. **float: left; :** Use float to get block elements to slide next to each other.

b. **display: block; :** Displaying the links as block elements makes the whole link area clickable (not just the text), and it allows us to specify padding (and height, width, margins, etc., if we want).

c. **padding: 8px; :** Since block elements take up the full width available, they cannot float next to each other. Therefore, specify some padding to make them look good.

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d. **background-color: #dddddd; :** Add a gray background-color to each a element.

Image sprites :

1. An image sprite is a collection of images put into a single image.
2. A web page with many images can take a long time to load and generates multiple server requests. Using image sprites will reduce the number of server requests and save bandwidth.

Example :

Instead of using three separate images, we use this single image ("img_navsprites.gif"):

With CSS, we can show just the part of the image we need.

In the following code the CSS specifies which part of the "img_navsprites.gif" image to show :

```
#home {
width: 46px;
height: 44px;
background: url(img_navsprites.gif) 0 0;
}
```

Example explanation :

i. **<img id="home" src="img_trans.gif"> :** Only defines a small transparent image because the src attribute cannot be empty. The displayed image will be the background image we specify in CSS.

ii. **width: 46px; height: 44px; :** Defines the portion of the image we want to use.

iii. **background: url(img_navsprites.gif) 0 0; :** Defines the background image and its position (left 0px, top 0px).

1. **To create a navigation list :**

We use the sprite image ("img_navsprites.gif") to create a navigation list. We will use an HTML list, because it can be a link and also supports a background image:

Example :

```
#navlist {
position: relative;
}
#navlist li {
margin: 0;
padding: 0;
list-style: none;
position: absolute;
top: 0;
}
```

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```
#navlist li, #navlist a {
height: 44px;
display: block;
}
#home {
left: 0px;
width: 46px;
background: url('img_navsprites.gif') 0 0;
}
#prev {
left: 63px;
width: 43px;
background: url('img_navsprites.gif') -47px 0;
}
#next {
left: 129px;
width: 43px;
background: url('img_navsprites.gif') -91px 0;
}
```

Example explanation :

i. **#navlist {position:relative;} :** Position is set to relative to allow absolute positioning inside it.

ii **#navlist li {margin:0;padding:0;list : Style : none; position : absolute;top:0;} :** Margin and padding are set to 0, list-style is removed, and all list items are absolute positioned.

iii. **#navlist li, #navlist a {height:44px;display:block;} :** The height of all the images are 44px.

2. **To add hover effect :**

This is one single image, and not six separate files, there will be no loading delay when a user hovers over the image. We only add three lines of code to add the hover effect :

Example :

```
#home a:hover {
background: url('img_navsprites_hover.gif') 0 -45px;
}
#prev a:hover {
background: url('img_navsprites_hover.gif') -47px -45px;
}
#next a:hover {
background: url('img_navsprites_hover.gif') -91px -45px;
```

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}

Example explanation :

i. **#home a : hover {background : transparent url ('img_navsprites_hover.gif') 0 -45px;) :** For all three hover images we specify the same background position, only 45px further down

CSS [attribute] Selector :

The [attribute] selector is used to select elements with a specified attribute. The following example selects all <a> elements with a target attribute :

Example :

```
a[target] {
background-color: yellow;
}
```

1. **CSS [attribute="value"] selector :**

The [attribute="value"] selector is used to select elements with a specified attribute and value. The following example selects all <a> elements with a target="_blank" attribute :

Example :

```
a[target="_blank"] {
background-color: yellow;
}
```

2. **CSS [attribute~="value"] selector :**

The [attribute~="value"] selector is used to select elements with an attribute value containing a specified word. The following example selects all elements with a title attribute that contains a space-separated list of words, one of which is "flower" :

Example :

```
[title~="flower"] {
border: 5px solid yellow;
}
```

3. **CSS [attribute|="value"] selector :**

The [attribute|="value"] selector is used to select elements with the specified attribute starting with the specified value. The following example selects all elements with a class attribute value that begins with "top":

Example :

```
[class|="top"] {
background: yellow;
}
```

4. **CSS [attribute^="value"] selector :**

The [attribute^="value"] selector is used to select elements whose attribute value begins with a specified value. The following example selects all elements with a class attribute value that begins with "top":

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Example :

```
[class^="top"] {
background: yellow;
}
```

5. **CSS [attribute$="value"] selector :**

The [attribute$="value"] selector is used to select elements whose attribute value ends with a specified value. The following example selects all elements with a class attribute value that ends with "test":

Example :

```
[class$="test"] {
background: yellow;
}
```

6. **CSS [attribute*="value"] selector :**

The [attribute*="value"] selector is used to select elements whose attribute value contains a specified value. The following example selects all elements with a class attribute value that contains "te":

Example :

```
[class*="te"] {
background: yellow;
}
```

7. **Styling forms :**

The attribute selectors can be useful for styling forms without class or ID :

Example :

```
input[type="text"] {
width: 150px;
display: block;
margin-bottom: 10px;
background-color: yellow;
}
input[type="button"] {
width: 120px;
margin-left: 35px;
display: block;
}
```

PART-6

CSS Color, Creating Page Layout and Site Designs.

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Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 3.28. **Explain color properties in CSS.**

Answer

In CSS, we can add colors in to web page by either using the hexadecimal format, for instance # FF0F00, or the RGB format, for instance rgb(171,205, 239).

Table 3.27.1. Hexadecimal and RGB value of different colors.

Color Name	Hexadecimal value	RGB value
Bisque	#ffe4c4	255,228,196
Black	#000000	0,0,0
Blue	#0000ff	0,0,255
Brown	#a52a2a	165,42,42
Coral	#ff7f50	255,127,80
Gold	#ffd700	255,215,0
Green	#008000	0,128,0

Color properties in CSS are :

1. **The opacity property :** The opacity property is used to produce transparency effect in an HTML element, it is also applied to its child elements. The syntax to use the opacity property is as follows :
   opacity: [number between 0-1] ;
2. **The RGBA value format :** The RGBA format takes four arguments, in which first three are same in the RGB format, while the fourth argument is the alpha channel. This argument specifies the transparency or opacity level of the specified color. It takes a number between 0 and 1 as a value.
3. **HSL and HSLA values format :** The HSL color format takes three parameters, Hue, saturation and lightness. The Hue parameters specifies an angle of the color around the circular wheel, for instance 0° (means red color), 60° (means yellow color), 120° (means green color), and 180° (means cyan color). Hue values are either integer or floats in the range 0-36 or integer of float percentage values in the range 0-100 %.

Que 3.29. **How we create web page layout design in CSS ?**

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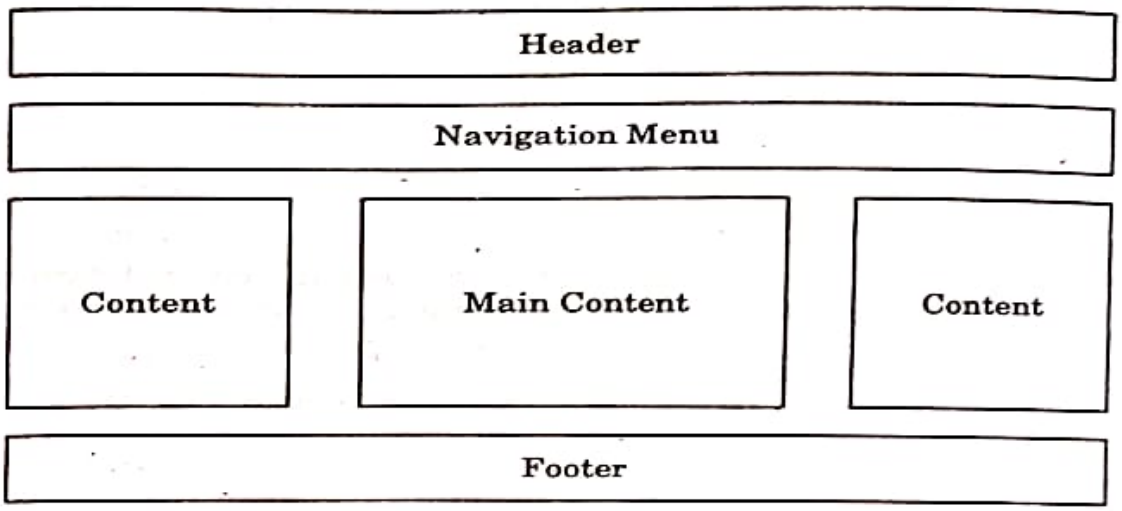
Answer

A website is often divided into headers, menus, content and footer :



1. **Header :** A header is usually located at the top of the website (or right below a top navigation menu). It often contains a logo or the website name :

Example :

```
.header {
background-color: #F1F1F1;
text-align: center;
padding: 20px;
}
```

2. **Navigation Bar :** A navigation bar contains a list of links to help visitors navigating through the website :

Example :

```
/* The navbar container */
.topnav {
overflow: hidden;
background-color: #333;
}
/* Navbar links */
.topnav a {
float: left;
display: block;
color: #f2f2f2;
```

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```
text-align: center;
padding: 14px 16px;
text-decoration: none;
}
/* Links - change color on hover */
.topnav a:hover {
background-color: #ddd;
color: black;
}
```

3. **Content :** The layout in this section often depends on the target users. The most common layout is one (or combining them) of the following :
   i. 1-column (often used for mobile browsers)
   ii. 2-column (often used for tablets and laptops)
   iii. 3-column layout (only used for desktops)
   iv. We will create a 3-column layout, and change it to a 1-column layout on smaller screens :

Example :

```
/* Create three equal columns that floats next to each other */
.column {
float: left;
width: 33.33%;
}
/* Clear floats after the columns */
.row:after {
content: " ";
display: table;
clear: both;
}
/* Responsive layout - makes the three columns stack on top of each other instead of next to each other on smaller screens (600px wide or less) */
@media screen and (max-width: 600px) {
.column {
width: 100%;
}
}
```

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4. **Unequal columns :**
   i. The main content is the biggest and the most important part of our site.
   ii. It is common with unequal column widths, so that most of the space is reserved for the main content.
   iii. The side content (if any) is often used as an alternative navigation or to specify information relevant to the main content. Change the widths as we like, only remember that it should add up to 100% in total :

Example :

```
.column {
float: left;
}
/* Left and right column */
.column.side {
width: 25%;
}
/* Middle column */
.column.middle {
width: 50%;
}
/* Responsive layout - makes the three columns stack on top of each other instead of next to each other */
@media screen and (max-width: 600px) {
.column.side, .column.middle {
width: 100%;
}
}
```

5. **Footer :** The footer is placed at the bottom of our page. It often contains information like copyright and contact info :

Example :

```
.footer {
background-color: #F1F1F1;
text-align: center;
padding: 10px;
}
```

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4
UNIT

Introduction to Client Side Scripting

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PART-1

Introduction to Client Side Scripting, Introduction to JavaScript, JavaScript Types, Variables in JS.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 4.1. Explain client side scripting.

Answer

1. Client-side scripting refers to the programs that are executed on client-side.
2. Client-side script contains the instruction for the browser to be executed in response to certain user's action.
3. Client-side scripting programs can be embedded into HTML files or also can be kept as separate files.

Commonly used client-side scripting languages :

1. **JavaScript :**
   a. It is a prototype based scripting language.
   b. It inherits its naming conventions from java.
   c. All JavaScript files are stored in file having .js extension.
2. **Actionscript :** It is an object-oriented programming language used for the development of websites and software targeting Adobe flash player.
3. **Dart :** It is an open source web programming language that relies on source-to-source compiler to JavaScript.
4. **VBscript :**
   a. It is an open source web programming language.
   b. It is superset of JavaScript and adds optional static typing class-based object-oriented programming.

Que 4.2. What is JavaScript ? Write down its advantages.

Answer

1. JavaScript is an open source and most popular client side scripting language supported by all browsers.

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2. JavaScript is used mainly for enhancing the interaction of a user with the webpage.

Advantages of JavaScript :

1. It shows dynamic content based on the user profile.
2. It reacts to user's operations, like mouse clicks events, key presses or pointer movements.
3. It supports features like auto-validated form entries and interactive drop-down menus.
4. It sends requests to remote servers, upload and download files.
5. It JavaScript code can also create movement and sound.
6. It asks questions to the users, Get and Set cookies, show messages, switch browser tabs.

Que 4.3. Write down the features of JavaScript.

Answer

Following are the features of JavaScript :

1. **Imperative and structured :** JavaScript supports all the syntax of the structured programming language C, such as if statement, loops, and switch statement.
2. **Dynamic text :** JavaScript supports dynamic typing. This means that the type of variable is defined according to the values stored in it.
3. **Functional :** JavaScript does not support classes. Instead of using classes, objects are created from the constructor functions. Each constructor function represents a unique object type.
4. **Prototype based :** JavaScript is a prototype based scripting language. This means the JavaScript uses prototypes instead of classes for inheritance. In JavaScript, each constructor function is associated with a prototype object.
5. **Platform-independent :** JavaScript supports platform independency or portability. This means that we can write the JavaScript application and run it on any platform or any browser without affecting the output of the script.

Que 4.4. Discuss the datatypes in JavaScript.

Answer

There are two types of datatypes in JavaScript :

1. **Primitive datatype :** There are five types of primitive datatypes in JavaScript. They are as follows :
   i. **String :** Represents a sequence of characters.

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ii. **Number :** Represents a numeric values.

iii. **Boolean :** Represents Boolean value either false or true.

iv. **Undefined :** Represents an undefined value.

v. **Null :** Represents a null.

2. **Non-primitive (reference) datatype :** The non-primitive datatypes are as follows :

i. **Object :** Represents instance through which we can access members.

ii. **Array :** Represents a group of similar values.

iii. **RegExp :** Represents a regular expression.

Que 4.5. Describe the JavaScript variables.

Answer

i. A JavaScript variable is a name of storage location.

ii. There are some rules while declaring a JavaScript variable (also known as identifiers) :

1. Name must start with a letter (a to z or A to Z), underscore (_), or dollar ($) sign.
2. After first letter we can use digits (0 to 9), for example value 1.
3. JavaScript variables are case sensitive, for example *x* and *X* are different variables.

Types of JavaScript variables :

1. **JavaScript local variable :** A JavaScript local variable is declared inside block or function. It is accessible within the function or block only. For example :

```
<script>
function abc(){
var x=10;//local variable
}
</script>
```

2. **JavaScript global variable :** A JavaScript global variable is accessible from any function. A variable *i.e.*, declared outside the function or declared with window object is known as global variable. For example :

```
<script>
var data=200;//global variable
function a(){
document.writeln(data);
```

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```
}
function b(){
document.writeln(data);
}
a(); //calling JavaScript function
b();
</script>
```

Example of JavaScript variable :

```
<script>
var x = 10;
var y = 20;
var z = x + y;
document.write(z);
</script>
```

PART-2

Operators in JS, Conditional Statements, JavaScript Loops, JS Popup Boxes.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 4.6. **Define JavaScript operators. What are the different types of operators is JS ? Explain.**

Answer

JavaScript operators are symbols that are used to perform operations on operands. For example :

```
var sum = 10 + 20 ;
```

Here, + is the arithmetic operator and = is the assignment operator.

Different types of operators in JS :

1. **JavaScript arithmetic operators :** Arithmetic operators are used to perform arithmetic operations on the operands. The following operators are known as JavaScript arithmetic operators :

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Operator	Description	Example
+	Addition	10+20 = 30
-	Subtraction	20-10 = 10
*	Multiplication	10*20 = 200
/	Division	20/10 = 2
%	Modulus (Remainder)	20%10 = 0
++	Increment	var a=10; a++; Now a = 11
--	Decrement	var a=10; a--; Now a = 9

2. **JavaScript comparison operators :** The JavaScript comparison operator compares the two operands. The comparison operators are as follows :

Operator	Description	Example
==	Is equal to	10==20 = false
===	Identical (equal and of same type)	10===20 = false
!=	Not equal to	10!=20 = true
!==	Not Identical	20!==20 = false
>	Greater than	20>10 = true
>=	Greater than or equal to	20>=10 = true
<	Less than	20<10 = false
<=	Less than or equal to	20<=10 = false

3. **JavaScript bitwise operators :** The bitwise operators perform bitwise operations on operands. The bitwise operators are as follows:

Operator	Description	Example
&	Bitwise AND	(10==20 & 20==33) = false
|	Bitwise OR	(10==20 | 20==33) = false
^	Bitwise XOR	(10==20 ^ 20==33) = false
~	Bitwise NOT	(~10) = -10
<<	Bitwise Left Shift	(10<<2) = 40
>>	Bitwise Right Shift	(10>>2) = 2
>>>	Bitwise Right Shift with Zero	(10>>>2) = 2

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4. **JavaScript logical operators :** The following operators are known as JavaScript logical operators.

Operator	Description	Example
&&	Logical AND	(10==20 && 20==33) = false
||	Logical OR	(10==20 || 20==33) = false
!	Logical Not	!(10==20) = true

5. **JavaScript assignment operators :** The following operators are known as JavaScript assignment operators.

Operator	Description	Example
=	Assign	10 +10 = 20
+=	Add and assign	var a=10; a+=20; Now a = 30
-=	Subtract and assign	var a=20; a-=10; Now a = 10
*=	Multiply and assign	var a=10; a*=20; Now a = 200
/=	Divide and assign	var a=10; a/=2; Now a = 5
%=	Modulus and assign	var a=10; a%=2; Now a = 0

6. **JavaScript special operators :** The following operators are known as JavaScript special operators.

Operator	Description
(?:)	Conditional operator returns value based on the condition. It is like if-else.
,	Comma operator allows multiple expressions to be evaluated as single statement.
Delete	Delete operator deletes a property from the object.
In	In operator checks if object has the given property.
Instanceof	Checks if the object is an instance of given type.
New	Creates an instance (object).
Typeof	Checks the type of object.
Void	It discards the expression's return value.
Yield	Checks what is returned in a generator by the generator's iterator.

Que 4.7. **Describe the various conditional statements.**

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Answer

Conditional statements are used to perform different actions based on different conditions. In JavaScript we have the following conditional statements :

1. **The if statement :** Use the if statement to specify a block of JavaScript code to be executed if a condition is true.

   Syntax :

   ```
   if (condition) {
   // block of code to be executed if the condition is true
   }
   ```

2. **The else statement :** Use the else statement to specify a block of code to be executed if the condition is false.

   Syntax :

   ```
   if (condition) {
   // block of code to be executed if the condition is true
   } else {
   // block of code to be executed if the condition is false
   }
   ```

3. **The else if statement :** Use the else if statement to specify a new condition if the first condition is false.

   Syntax :

   ```
   if (condition1) {
   // block of code to be executed if condition1 is true
   } else if (condition2) {
   // block of code to be executed if the condition1 is false and condition 2 is true
   } else {
   // block of code to be executed if the condition1 is false and condition 2 is false
   }
   ```

4. **The switch statement :** Use the switch statement to select one of many code blocks to be executed.

   Syntax :

   ```
   switch(expression) {
   case x :
   // code block
   break ;
   ```

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```
case y :
// code block
break;
default:
// code block
}
```

Que 4.8. **Explain the four types of loops in JavaScript.**

Answer

The JavaScript loops are used to iterate the piece of code using for, while, do while or for-in loops. It makes the code compact. It is mostly used in array.

Four types of loops in JavaScript :

1. **JavaScript for loop :** The JavaScript for loop iterates the elements for the fixed number of times. It should be used if number of iteration is known.

   Syntax :

   ```
   for (initialization; condition; increment)
   {
   code to be executed
   }
   ```

   For example :

   ```
   <script>
   for (i=1; i<=5; i++)
   {
   document.write(i + "<br/>")
   }
   </script>
   ```

2. **JavaScript while loop :** The JavaScript while loop iterates the elements for the infinite number of times. It should be used if number of iteration is not known.

   Syntax :

   ```
   while (condition)
   {
   code to be executed
   }
   ```

   For example :

   ```
   <script>
   ```

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```
var i=11;
while (i<=15)
{
document.write(i + "<br/>");
i++;
}
</script>
```

3. **JavaScript do while loop :** The JavaScript do while loop iterates the elements for the infinite number of times like while loop. But, code is executed at least once whether condition is true or false.

Syntax :

```
do{
code to be executed
}while (condition);
```

For example :

```
<script>
var i=21;
do{
document.write(i + "<br/>");
i++;
}while (i<=25);
</script>
```

4. **JavaScript for in loop :** The JavaScript for in loop is used to iterate the properties of an object.

For example :

```
var person = {fname:"John", lname:"Doe", age:25};
var text = "";
var x;
for (x in person) {
  text += person[x];
}
```

Que 4.9. What are the three kinds of popup boxes in JS ?

Answer

Three kinds of popup boxes in JavaScript are :

1. **Alert box :**
   i. An alert box is used if we want to make sure information comes through the authenticated user.

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ii. When an alert box pops up, the user has to click "OK" to proceed.

Syntax :

```
window.alert("sometext");
```

Example :

```
alert("I am an alert box!");
```

2. **Confirm box :**

i. A confirm box is used if we want the user to verify or accept something.

ii. When a confirm box pops up, the user will have to click either "OK" or "Cancel" to proceed.

iii. If the user clicks "OK", the box returns true. If the user clicks "Cancel", the box returns false.

Syntax :

```
window.confirm("sometext");
```

Example :

```
if (confirm("Press a button!")) {
txt = "You pressed OK!";
} else {
txt = "You pressed Cancel!";
}
```

3. **Prompt box :**

i. A prompt box is used if we want the user to input a value before entering a page.

ii. When a prompt box pops up, the user will have to click either "OK" or "Cancel" to proceed after entering an input value.

iii. If the user clicks "OK" the box returns the input value. If the user clicks "Cancel" the box returns null.

Syntax :

```
window.prompt("sometext","defaultText");
```

Example :

```
var person = prompt("Please enter your name", "Harry Potter");
if (person == null || person == "") {
txt = "User cancelled the prompt.";
} else {
txt = "Hello" + person + "! How are you today?";
}
```

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PART-3

JS Events, JS Arrays, Working with Arrays.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 4.10. Describe the events in JS.

Answer

1. JavaScript has events to provide a dynamic interface to a webpage. These events are hooked to elements in the Document Object Model (DOM).
2. These events by default uses bubbling propagation *i.e.*, upwards in the DOM from children to parent. We can bind events either as inline or in an external script.

Some JavaScript events :

1. **Onclick events :** This is a mouse event and provokes any logic defined if the user clicks on the element it is bound to.

   Code :

```
<!doctype html>
<html>
<head>
<script>
function hiThere() {
alert('Hi there!');
}
</script>
</head>
<body>
<button type="button" onclick="hiThere()">Click me event</button>
</body>
</html>
```

2. **Onkeyup event :** This event is a keyboard event and executes instructions whenever a key is released after pressing.

   Code :

   filter_none

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```
edit
play_arrow
brightness_4
<!doctype html>
<html>
<head>
<script>
var a = 0;
var b = 0;
var c = 0;
function changeBackground() {
var x = document.getElementById('bg');
bg.style.backgroundColor = 'rgb('+a+', '+b+', '+c+')';
a += 1;
b += a + 1;
c += b + 1;
if (a > 255) a = a – b;
if (b > 255) b = a;
if (c > 255) c = b;
}
</script>
</head>
<body>
<input id="bg" onkeyup="changeBackground()"
placeholder="write something" style="color:#fff">
</body>
</html>
```

3. **Onfocus event :** An element listing to this event executes instructions whenever it receives focus.

Code :

```
filter_none
edit
play_arrow
brightness_4
<!doctype html>
<html>
```

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```
<head>
<script>
function focused() {
var e = document.getElementById('inp');
if (confirm('Got it?')) {
e.blur();
}
}
</script>
</head>
<body>
<p >Take the focus into the input box below:</p>
<input id="inp" onfocus="focused()">
</body>
</html>
```

4. **Onblur event :** This event is evoked when an element loses focus.

Code :

```
filter_none
edit
play_arrow
brightness_4
<!doctype html>
<html>
<head>
</head>
<body>
<p>Write something in the input box and then click elsewhere
in the document body.</p>
<input onblur="alert(this.value)">
</body>
</html>
```

List of some common HTML events :

1. **Onchange :** An HTML element has been changed.
2. **Onclick :** The user clicks an HTML element.
3. **Onmouseover :** The user moves the mouse over an HTML element.
4. **Onmouseout :** The user moves the mouse away from an HTML element.

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5. **Onkeydown :** The user pushes a keyboard key.
6. **Onload :** The browser has finished loading the page.

Que 4.11. What is array ? Define its properties and methods.

Answer

Array :

1. An array is a special variable, which can hold more than one value at a time.
2. If we have a list of items (a list of car names, for example), storing the cars in single variables could look like this :

```
var car1 = "Suzuki";
var car2 = "Hyundai";
var car3 = "Mahindra";
```

Properties of array :

1. **Constructor :** Returns a reference to the array function that created the object.
2. **Index :** The property represents the zero-based index of the match in the string.
3. **Input :** This property is only present in arrays created by regular expression matches.
4. **Length :** Reflects the number of elements in an array.
5. **Prototype :** The prototype property allows us to add properties and methods to an object.

Methods of array :

1. **Concat() :** Returns a new array comprised of this array joined with other array(s) and/or value(s).
2. **Every() :** Returns true if every element in this array satisfies the provided testing function.
3. **Filter() :** Creates a new array with all of the elements of this array for which the provided filtering function returns true.
4. **ForEach() :** Calls a function for each element in the array.
5. **Indexof() :** Returns the first (least) index of an element within the array equal to the specified value, or – 1 if none is found.

Que 4.12. Explain the ways to construct an array in JavaScript.

Answer

JavaScript array is an object that represents a collection of similar type of elements.

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Three ways to construct array in JavaScript :

1. **JavaScript array literal :** The syntax of creating array using array literal is :

```
var arrayname=[value1,value2.....valueN];
```

For example :

```
<script>
var emp=["Raj","Sunil","Aditya"];
for (i=0;i<emp.length;i++){
document.write(emp[i] + "<br/>");
}
</script>
```

Output :

Raj
Sunil
Aditya

2. **JavaScript array directly (new keyword) :** The syntax of creating array directly is :

```
var arrayname=new Array();
```

Here, new keyword is used to create instance of array.

For example :

```
<script>
var i;
var emp = new Array();
emp[0] = "Karan";
emp[1] = "Mahesh";
emp[2] = "Rahul";
for (i=0;i<emp.length;i++){
document.write(emp[i] + "<br>");
}
</script>
```

Output :

Karan
Mahesh
Rahul

3. **JavaScript array constructor (new keyword) :** We have to create instance of array by passing arguments in constructor so that we do not have to provide value explicitly.

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For example :

```
<script>
var emp=new Array("Tarun","Varun","Sagar");
for (i=0;i<emp.length;i++){
document.write(emp[i] + "<br>");
}
</script>
```

Output :

Tarun
Varun
Sagar

PART-4

JS Objects, JS Functions, Using JavaScript in Real Time.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 4.13. What are JS objects ? What are the ways to create object ?

Answer

1. A JavaScript object is an entity having state and behaviour (properties and method).
2. JavaScript is an object-based language. Everything is an object in JavaScript.
3. JavaScript is template based, not class based. Here, we do not create class to get the object. But, we directly create objects.

Three ways to create objects :

1. **JavaScript object by object literal :** The syntax of creating object using object literal is :

   object={property1:value1,property2:value2.....propertyN:valueN}

   For example :

   ```
   <script>
   emp={id:112,name:"Raghav Sharma",salary:55000}
   document.write(emp.id+" "+emp.name+" "+emp.salary);
   </script>
   ```

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Output :

112 Raghav Sharma 55000

2. **By creating instance of object :** The syntax of creating object directly is :

```
var objectname=new Object();
```

Here, new keyword is used to create object.

For example :

```
<script>
var emp=new Object();
emp.id=111;
emp.name="Raj Mishra";
emp.salary=40000;
document.write(emp.id+" "+emp.name+" "+emp.salary);
</script>
```

Output :

111 Raj 40000

3. **By using an object constructor :** Create function with arguments. Each argument value can be assigned in the current object by using this keyword. The 'this' keyword refers to the current object.

For example :

```
<script>
function emp(id,name,salary){
this.id=id;
this.name=name;
this.salary=salary;
}
e=new emp(113,"Vikas Lambhe",20000);
document.write(e.id+" "+e.name+" "+e.salary);
</script>
```

Output :

113 Vikas Lambhe 20000

Que 4.14. Describe JavaScript functions.

Answer

1. A JavaScript function is defined with the function keyword, followed by a name, followed by parentheses ().

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2. Function names can contain letters, digits, underscores, and dollar signs (same rules as variables).
3. The parentheses may include parameter names separated by commas : (parameter1, parameter2, ...)
4. The code to be executed, by the function, is placed inside curly brackets : {}

Syntax :

```
function name(parameter1, parameter2, parameter3) {
// code to be executed
}
```

5. The code inside the function will execute when "something" invokes (calls) the function :
   i. When an event occurs (when a user clicks a button).
   ii. When it is invoked (called) from JavaScript code.
   iii. Automatically (self invoked).
6. When JavaScript reaches a return statement, the function will stop executing.
7. If the function was invoked from a statement, JavaScript will "return" to execute the code after the invoking statement.
8. Functions often compute a return value. The return value is "returned" back to the "caller" :

Example : Calculate the product of two numbers, and return the result :

```
var x = myFunction(4, 3);  // Function is called, return value will end up in x
function myFunction(a, b) {
return a * b;              // Function returns the product of a and b
}
```

Output :

The result in x will be :

12

Que 4.15. Explain JavaScript libraries in real time.

Answer

Real time JavaScript Libraries are :

1. **Horizon :**
   a. Horizon is an open-source developer platform for building sophisticated realtime apps.

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b. It provides a complete backend that makes it dramatically simpler to build, deploy, manage, and scale engaging JavaScript web and mobile apps.

c. Horizon is extensible, integrates with the Node.js stack, and allows building modern, arbitrarily complex applications.

2. **Gun :** GUN is a real time, distributed, offline-first, graph database engine.

3. **Smoothie Charts :** Smoothie Charts is a small charting library designed for live streaming data.

4. **GeoFire for JavaScript :**

a. GeoFire is an open-source library that allows us to store and query a set of keys based on their geographic location.

b. GeoFire simply stores locations with string keys.

c. Its main benefit, however, is the possibility of retrieving only those keys within a given geographic area - all in real time.

5. **Reactivemaps :**

a. Reactivemaps is a React based components library for building real time maps.

b. It is built on top of the appbase.io realtime DB service and ships with 20+ components for Lists, Dropdowns, Numeric Range, Sliders, Data Search, Places Search, Distance Slider and Dropdowns, Calendars, Feeds and Maps.

PART-5

Validation of Forms, Related Examples.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 4.16. Discuss JavaScript form validation.

Answer

JavaScript provides a way to validate form's data on the client's computer before sending it to the web server. Form validation generally performs two functions :

a. **Basic validation :** The form must be checked to make sure all the mandatory fields are filled in. It would require just a loop through each field in the form and check for data.

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b. Data format validation : The data that is entered must be checked for correct form and value. The code must include appropriate logic to test correctness of data.

Example :

```
<html>
<head>
<title>Form Validation</title>
<script type = "text/javascript">
<!--
// Form validation code will come here.
//-->
</script>
</head>
<body>
<form action = "/cgi-bin/test.cgi" name = "myForm" onsubmit =
"return(validate());">
<table cellspacing = "2" cellpadding = "2" border = "1">
<tr>
<td align = "right">Name</td>
<td><input type = "text" name = "Name" /></td>
</tr>
<tr>
<td align = "right">EMail</td>
<td><input type = "text" name = "EMail" /></td>
</tr>
<tr>
<td align = "right">Zip Code</td>
<td><input type = "text" name = "Zip" /></td>
</tr>
<tr>
<td align = "right">Country</td>
<td>
<select name = "Country">
<option value = "– 1" selected>[choose yours]</option>
<option value = "1">USA</option>
<option value = "2">UK</option>
<option value = "3">INDIA</option>
```

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```
</select>
</td>
</tr>
<tr>
<td align = "right"></td>
<td><input type = "submit" value = "Submit" /></td>
</tr>
</table>
</form>
</body>
</html>
```

1. **Basic form validation :** In the above form, we are calling validate() to validate data when onsubmit event is occurring. The following code shows the implementation of this validate() function.

```
<script type = "text/javascript">
<!--
// Form validation code will come here.
function validate() {
if( document.myForm.Name.value == "" ) {
alert( "Please provide your name!" );
document.myForm.Name.focus() ;
return false;
}
if( document.myForm.Email.value == "" ) {
alert( "Please provide your email!");
document.myForm.EMail.focus() ;
return false;
}
if( document.myForm.Zip.value == "" || isNaN(
document.myForm.Zip.value ) ||
document.myForm.Zip.value.length != 5 ) {
alert("Please provide a zip in the format #####.");
document.myForm.Zip.focus() ;
return false;
}
if( document.myForm.Country.value == "-1" ) {
alert("Please provide your country!");
```

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```
return false;
}
return( true );
}
//-->
</script>
```

2. **Data format validation :** The following example shows how to validate an entered email address. An email address must contain at least a '@' sign and a dot (.). Also, the '@' must not be the first character of the email address, and the last dot must at least be one character after the '@' sign.

Example of email validation :

```
<script type = "text/javascript">
<!--
function validateEmail() {
var emailID = document.myForm.Email.value;
atpos = emailID.indexOf("@");
dotpos = emailID.lastIndexOf(".");
if (atpos < 1 || ( dotpos – atpos < 2 )) {
alert("Please enter correct email ID")
document.myForm.Email.focus() ;
return false;
}
return( true );
}
//-->
</script>
```

Que 4.17. Give examples of JavaScript form validation.

Answer

In this example, we will to validate the name and password. The name cannot be empty and password cannot be less than 6 characters long.

Here, we are validating the form on form submit. The user will not be forwarded to the next page until given values are correct.

```
<script>
function validateform(){
var name=document.myform.name.value;
```

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```
var password=document.myform.password.value;
if (name==null || name==""){
alert("Name can't be blank");
return false;
}else if(password.length<6){
alert("Password must be at least 6 characters long.");
return false;
}
}
</script>
<body>
<form name="myform" method="post" action="abc.jsp"
onsubmit="return validateform()" >
Name: <input type="text" name="name"><br/>
Password: <input type="password" name="password"><br/>
<input type="submit" value="register">
</form>
```

JavaScript number validation :

To validate the textfield for numeric value only. Here, we are using isNaN() function.

```
<script>
function validate(){
var num=document.myform.num.value;
if (isNaN(num)){
document.getElementById("numloc").innerHTML="Enter Numeric
value only";
return false;
}else{
return true;
}
}
</script>
<form name="myform" onsubmit="return validate()">
```

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```
Number: <input type="text" name="num"><span id="numloc"></
span><br/>
<input type="submit" value="submit">
</form>
```

JavaScript validation with image :

An interactive JavaScript form validation example that displays correct and incorrect image if input is correct or incorrect.

```
<script>
function validate(){
var name=document.f1.name.value;
var password=document.f1.password.value;
var status=false;
if(name.length<1){
document.getElementById("nameloc").innerHTML=
" <img src='unchecked.gif'/> Please enter your name";
status=false;
}else{
document.getElementById("nameloc").innerHTML=" <img
src='checked.gif'/>";
status=true;
}
if(password.length<6){
document.getElementById("passwordloc").innerHTML=
" <img src='unchecked.gif'/> Password must be at least 6 char long";
status=false;
}else{
document.getElementById("passwordloc").innerHTML=" <img
src='checked.gif'/>";
}
return status;
}
</script>
<form name="f1" action="#" onsubmit="return validate()">
<table>
<tr><td>Enter Name:</td><td><input type="text" name="name"/>
<span id="nameloc"></span></td></tr>
```

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```
<tr><td>Enter Password:</td><td><input type="password"
name="password"/>
<span id="passwordloc"></span></td></tr>
<tr><td colspan="2"><input type="submit" value="register"/></td></tr>
</table>
</form>
```

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```
}
if password.length<6){
document.getElementById("passwordloc
" <img src="unchecked.gif" /> Password m
status=false;
}else{
document.getElementById("passwordl
src='checked.gif' />";
}
return status;
}
</script>
<form name="f1" action="#" onsubmit="retur
<table>
<tr><td>Enter Name:</td><td><input type="
<span id="nameloc"></span></td></tr>
```

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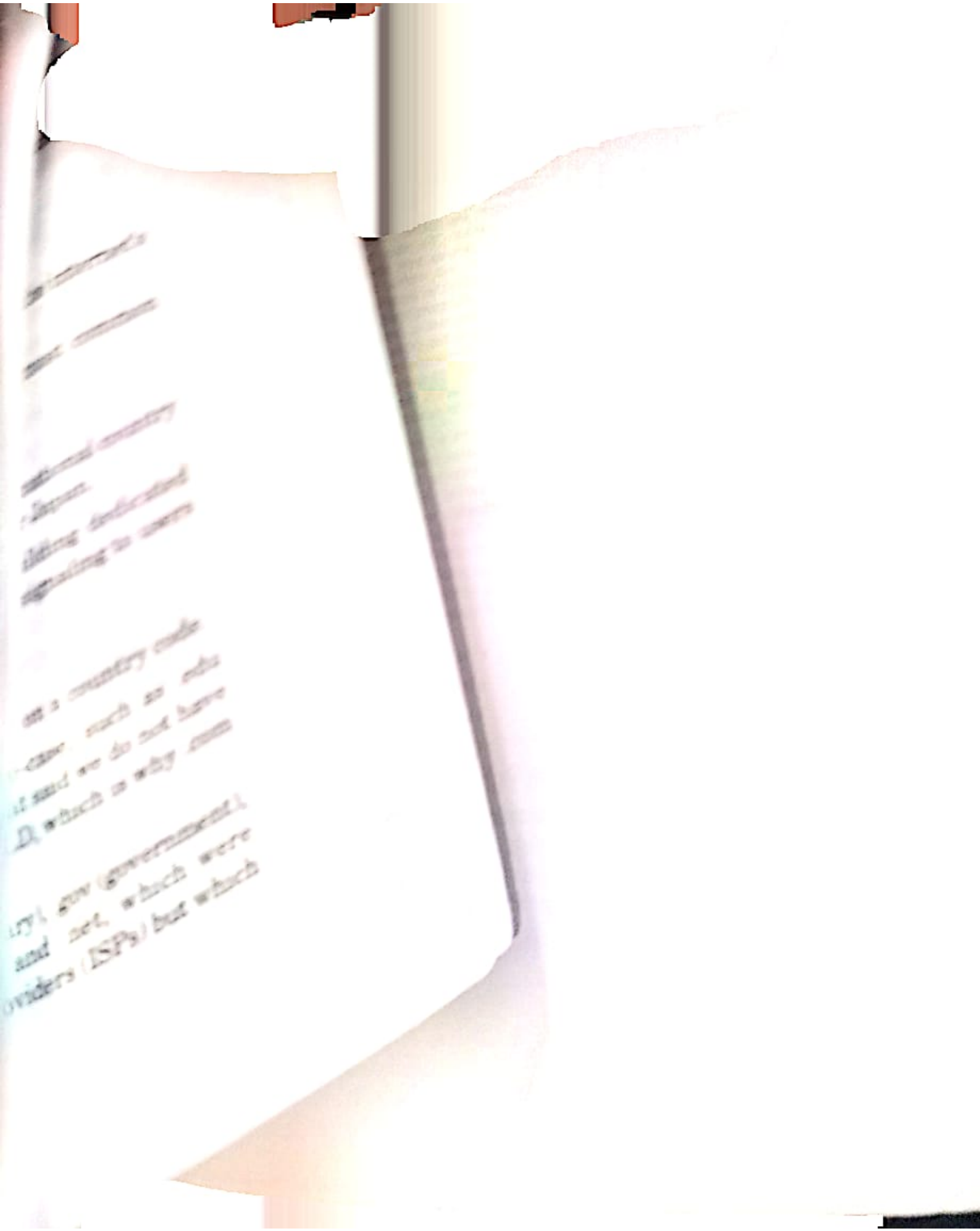

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5 UNIT

Web Hosting and Concepts of SEO

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PART-1

Web Hosting Basics, Types of Hosting Packages, Registering Domains.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 5.1. Define web hosting. Write down the various hosting platform.

Answer

1. Web hosting is a service that allows organizations and individuals to post a website or web page onto the Internet.
2. A web host, or web hosting service provider is a business that provides the technologies and services needed for the website or web page to be viewed in the Internet.
3. Websites are hosted or stored on special computers called servers.

Various hosting platforms :

1. **Windows hosting servers :**
   a. Many hosting servers run different flavors of Windows and we can buy space from these servers.
   b. Windows hosting servers are more expensive because a lot of software licensing costs are involved with these servers.
2. **Linux hosting servers :**
   a. For Linux, opportunities are unlimited and they will have to pay less then what you will pay for windows hosting server.
   b. There are many ISP who provides hosting servers with different flavors of Unix.

Que 5.2. Describe the types of web hosting services.

Answer

Types of web hosting services :

1. **Website builders are :**
   i. Website builder services is a type of hosting service that provides ... beginners who need to host a website, but lack the technical skil... and knowledge to build one.

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ii. Website builder services typically provide with an online browser-based interface to build the website, and also host the website without any additional setup.

2. **Shared hosting :**
   i. In a shared hosting environment, our and other website owners shared one server.
   ii. This includes sharing the physical server and the software applications within the server.
   iii. Shared hosting services are affordable because the cost to operate the server is shared between us and other owners. There are a number of down sides, such as being slower.

3. **Dedicated hosting :**
   i. In a dedicated hosting environment, we have the entire web server to ourself.
   ii. This allows for faster performance, as we have all the server's resources entirely, without sharing with other website owners.
   iii. However, this also means that we will be responsible for the cost of server operation entirely.
   iv. This is a good choice for websites that requires a lot of system resources, or need a higher level of security.

4. **Collocated hosting :**
   i. In this type of hosting, we have to purchase our own server and housed at a web host's facilities.
   ii. We will be responsible for the server itself. An advantage of this type of hosting service is we have full control of the web server.
   iii. We can install any scripts or applications we need.

5. **Managed hosting :**
   i. Most hosting packages are find online and are likely to be managed.
   ii. Hosting companies provide technical services such as hardware and software setup and configuration, maintenance, hardware replacement, technical support, patching, updating and monitoring.
   iii. With managed hosting, the provider looks after the day-to-day management of the hardware, operating systems and standardised applications.

Que 5.3. Define domain name. Why it is important ? What are different types of domains ?

Answer

Domain name :

1. A domain name is our website name. A domain name is the address where Internet users can access our website.

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2. A domain name is used for finding and identifying computers on the Internet.
3. Computers use IP addresses, which are a series of number. However, it is difficult for humans to remember strings of numbers. Because of this, domain names were developed and used to identify entities on the Internet rather than using IP addresses.
4. A domain name can be any combination of letters and numbers, and it can be used in combination of the various domain name extensions, such as .com, .net and more.
5. The domain name must be registered before we can use it. Every domain name is unique. No two websites can have the same domain name

Importance of domain name :

1. It is the first impression. The URL is the first thing the visitors will see. A good domain name can make a positive and lasting impression while a bad domain name can send visitors running.
2. It affects SEO. While Exact Match Domains (EMDs) are no longer a necessity, keywords in the domain name can still help the SEO ranking.
3. It defines the brand. The domain name is a branding opportunity. The right domain name can increase brand recognition.

Different types of domains :

1. **TLD (Top Level Domains) :**
   i. It is a type of domain name which is at the top level of the internet's domain name system.
   ii. There are over a thousand TLDs available but the most common include .com, .org, .net and .edu.
2. **ccTLD (Country Code Top Level Domains) :**
   i. ccTLDs use just two letters and are based upon international country codes, such as .us for the United States and .jp for Japan.
   ii. They are often used by companies which are building dedicated sites for specific regions and can be a good way of signaling to users that they have arrived at the right place.
3. **gTLD (Generic Top Level Domain) :**
   i. A gTLD is essentially a TLD that does not rely on a country code.
   ii. Many gTLDs are intended for a specific use-case, such as .edu which is aimed at educational institutions. That said we do not have to meet any specific criteria to register a gTLD, which is why .com is not only used for commercial purposes.
   iii. Other examples of gTLDs include .mil (military), .gov (government), .org (for non-profits and organizations) and .net, which were originally designed for internet service providers (ISPs) but which is now used much more widely.

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Que 5.4. **How to register a domain name ? List the best domain registrar.**

Answer

To register domain name :

1. Confirm that the name we want is available. We can begin our search at a name registrar such as GoDaddy. We have to be creative, as the domain will be the central focus of our site.
2. If the name is available, we will have the choice to register the domain on several different top-level domains if available, such as .com, .org, .biz, and .net. If the name is not available, simply try again.
3. After selecting the top-level domains to register with, the last choice to make is for how long we want to reserve the name. We can buy domain names in year-long increments, up to a maximum of 10 years.
4. When we have finalized the name, the top-level domains it should be on, and the amount of time we want to hold the rights to the name, we need to pay the registrar to make the registration for us. Once we pay, we own the domain name.

Best domain registrar :

1. **GoDaddy :** A well-known option, due to the company's constant sale prices for first-time registrations, other domain registrars offer better prices or include additional features (like domain privacy, which keeps our personal registration details out of the public WHOIS directory) for no extra charge.
2. **Namecheap :** Namecheap is as popular as GoDaddy, but offers slightly better prices for domain registrations. It also offers a wider assortment of paid add-ons, like domain privacy and SSL certificates, with far more reasonable rates.
3. **Hover :** Hover's almost dizzying assortment of top-level domains for a unique domain extension. Registrations include free domain privacy on supported domains. Overall, prices are fair, with costs clearly listed for first-time registrations, renewals, and transfers.
4. **Google domains :** The company offer good prices, a fair selection of domain extensions, and free private registration on domains that support it, but it does so without pushing any additional features and services.

PART-2

Defining Name Servers, Using Control Panel, Creating E-mails in cPanel.

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Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 5.5. Explain name server.

Answer

1. Name server is a server on the Internet specialized in handling queries regarding the location of the domain name's various services. Name servers define the domain's current DNS provider.
2. A name server translates domain names into IP addresses. This makes it possible for a user to access a website by typing in the domain name instead of the website's actual IP address.
3. For example, when we type in "www.microsoft.com," the request gets sent to Microsoft's name server which returns the IP address of the Microsoft website.
4. Each domain name must have at least two name servers listed when the domain is registered.
5. These name servers are commonly named ns1.servername.com and ns2.servername.com, where "servername" is the name of the server.
6. The first server listed is the primary server, while the second is used as a backup server if the first server is not responding.
7. Name servers are a fundamental part of the Domain Name System (DNS).

Que 5.6. Define control panel. How to access and use control panel ?

Answer

1. Control panel is the centralized configuration area in Windows.
2. It is used to make changes to nearly every aspect of the operating system. This includes keyboard and mouse function, passwords and users, network settings, power management, desktop backgrounds, sounds, hardware, program installation and removal, speech recognition, parental control, etc.

To access the control panel :

1. In recent versions of Windows, control panel is accessible from the Windows system folder or category in the apps listing.
2. In other versions of Windows, click start and then control panel or Start, then settings, then control panel.

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To use the control panel :

1. The control panel itself is a collection of shortcuts to individual components called control panel applets.
2. To use control panel means to use an individual applet to change some part of how Windows works.
3. To access the areas of control panel directly, without going through control panel, list of control panel commands in Windows for the commands that start each applet.
4. Since some applets are shortcuts to files with the .CPL file extension, we can point directly to the CPL file to open that component.

Control panel views :

1. The applets in control panel can be viewed in two major ways : by category or individually.
2. All control panel applets are available either way but may prefer one method of finding an applet over the other :
   - i. **Windows 10, 8, and 7 :** Control panel applets can be viewed by category which groups them together logically, or in the Large icons or Small icons view which lists them individually.
   - ii. **Windows Vista :** The control panel home view groups applets while the classic view shows each applet individually.
   - iii. **Windows XP :** Category view groups the applets and classic view lists them as individual applets.

Que 5.7. How to create E-mails in cPanel ?

Answer

To create E-mail accounts from cPanel :

1. Log in to cPanel. In the E-mail section, click the E-mail accounts link or icon.
2. Click the CREATE button.
3. On the next screen, we will enter the information for the address :
   - i. **Username :** Enter a username for the E-mail address we want to create and select the domain from the drop-down.
   - ii. **Password :** Enter a password, the system will scan the complexity of the word and give us a weak-to-strong rating. We can also click GENERATE to create a password that is difficult to crack.
   - iii. **Storage space :** Enter a size in MB in the field, or select the Unlimited option.
     If the E-mail account exceeds the storage space specified here, incoming mail will bounce back to the sender, so plan accordingly.
   - iv. Leave send a welcome E-mail with instructions to set up a mail client checked to send a welcome E-mail.

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v. Check the stay on this page after click. Create box if we are creating multiple E-mail accounts. When the box is unchecked, after the account is created we will be redirected to the List E-mail Accounts page.

vi. Click the CREATE button.

4. Now, a new address is ready to send or receive messages. Leave the Send a welcome E-mail with mail client configuration instructions option checked.

5. We can access the welcome E-mail from webmail clients.

6. Typically cPanel accounts can access webmail clients through a URL such as : http://webmail.ggexample.com/, http://ggexample.com/webmail/ Replace "ggexample.com" with the domain name.

PART-3

Using FTP Client, Maintaining a Website.

Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 5.8. How to publish a website using FTP ?

Answer

FTP (File Transfer Protocol) is a method of transferring files over the Internet. To upload files via FTP, we will need a special program called an FTP client. FileZilla is a free and reliable FTP client.

To connect to an FTP server we need the following information :

1. **FTP server address :** The FTP address should be ftp://our-domain-name.com, where our-domain-name.com is the site's Internet address.
2. **FTP username :** It is identical to system username. The system username may differ from the username that is used for logging in to website. To find what system user name is, go to Websites and Domains and click Web Hosting Access. We will find it under Username. We can change the system username if we want.
3. **FTP password :** It is identical to system user password. If we do not know what the system user password is, go to Websites and Domains and click Web Hosting Access. We can reset the password under Password.

To publish a website using FTP :

1. Connect to the subscription on the server with an FTP client program, using the FTP account username and password.

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2. Upload the files and directories of the site to the httpdocs directory. If CGI script is used, place the cgi-bin directory.
3. Close the FTP session.

Que 5.9. How to maintain a website ?

Answer

Things that need to be done when maintaining a website :

1. **Keep secure :**
   i. Monitor for malware, viruses, hackers, and errors. Hackers do not usually announce themselves on the front page of the website.
   ii. Setting up a regular monitoring service will ensure that if we got infected or have site errors, we can fix them fast.
2. **Keep a regular backup schedule :**
   i. Backing up site is something that should be done regularly, especially for those who update their site often.
   ii. Do not expect web host to be keeping a scheduled backup.
   iii. If it is, it could be old, and not on track with the latest site updates.
   iv. If the server crashes for some reason or the site gets hacked, or there is some major mistake, edits could be gone.
3. **Keep updated software :**
   i. Software most websites are built on a content management system, which means it is software that can potentially be exploited.
   ii. We use WordPress for many reasons, but one is that it is constantly being updated, improved, and made more secure.
   iii. When WordPress releases a new version, it is must to update the site. Failing to do this leaves vulnerable.
   iv. Plugin updates should be treated in the same way - all software updates are a form of protection.
4. **Keep updated content :**
   i. Content is not a maintenance issue, but it is important to keep the site fresh and updated on the content front that is included.
   ii. A regular blogging or publishing schedule that pushes out relevant content will keep the returning visitors happy and engaged.

PART-4

Concepts of SEO : Basics of SEO, Importance of SEO, Onpage Optimization Basics.

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Questions-Answers

Long Answer Type and Medium Answer Type Questions

Que 5.10. **What is SEO ? What are the types of SEO ?**

Answer

1. SEO (Search Engine Optimization) is the practice of increasing the quantity and quality of traffic to the website through organic search engine results.
2. Search Engine Optimization is the process of optimizing web pages and their content to be easily discoverable by users searching for terms relevant to the website.
3. The term SEO describes the process of making web pages easier for search engine indexing software, known as "crawlers," to find, scan, and index of our site.
4. Search Engine Optimization refers to set of activities that are performed to increase number of desirable visitors who come to the site via search engine.
5. These activities may include making changes to our text and HTML code, formatting text or document to communicate directly to the search engine.
6. It is a process designed to optimize a website for search engines. It helps websites to achieve higher ranking in search engine results when people search keywords related to their products and services.
7. Thus, it increases the quantity and quality of traffic to a website through organic search engine results.

Basic activities involved in SEO :

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Types of SEO :

1. **White hat SEO :**
   i. It refers to the SEO techniques which are in accordance with the SEO guidelines set by the search engines.
   ii. It means it uses approved search engine optimization techniques to improve the ranking of a site on Search Engine Results Pages (SERP).
   iii. Mainly focuses on the human audience opposed to a search engine. People who are looking for a long-term investment on their websites rely on white hat SEO techniques.
2. **Black hat SEO :**
   i. It refers to the SEO techniques which are not in accordance with the SEO guidelines set by the search engines.
   ii. These techniques exploit the weaknesses in search engines to get higher rankings for websites on the Search Engine Results Pages (SERP).

Que 5.11. Write down the advantages and disadvantages of SEO ?

Answer

Advantages of SEO :

1. SEO is the easiest method which helps us to make our site visible.
2. Various SEO techniques help us to get more traffic on our websites.
3. The most effective way for the branding of our product on Google.
4. Increase visibility on Search Engines.
5. Convert a local business into International Business.
6. SEO methods allow search engines to find out what each page is about and how it can use for users.

Disadvantages of SEO :

1. SEO is a slow process, so sometimes it took months or years to get the desired result.
2. Not a very transparent process so there are plenty of things to consider for measuring it.
3. There are so many things which are not in our control, so it requires constant efforts and optimizations.

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Que 5.12. **Differentiate between white hat and black hat SEO.**

Answer

S. No.	White hat SEO	Black hat SEO
1.	The techniques which comply with search engine guidelines are used to improve search engine rankings.	The techniques which are not approved by search engine are used to improve SEO of a site.
2.	Do not need to worry about getting penalized or de-indexing of the site.	It may get the site banned, de-indexed or penalized by search engines.
3.	Focused on providing quality and relevant content to the users.	Do not care about the quality of the content.
4.	Suitable for people who are looking for a long-term investment.	People looking for quick financial return prefer black hat SEO.
5.	It focuses on optimum use of keywords in title, metatags and body on content.	Keyword density is increased to achieve higher search engine ranking.

Que 5.13. **How SEO is useful ? Describe the working of SEO.**

Answer

SEO is useful for :

i. Designing and developing a website that is search engine friendly.

ii. Optimizing the volume and quality of website traffic from search engines.

iii. Knowing how search algorithms work and what the target audiences might search.

Working of SEO : The work of the search engine is divided into three stages :

1. **Crawling :**
   - i. The search engines have the web crawler or spiders to perform crawling.
   - ii. The task of crawler is to visit a web page, read it and follow the links to other web pages of the site.
   - iii. Each time the crawler visits a webpage it makes a copy of the page and adds its URL to the index.

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iv. After adding the URL it regularly visits the sites like every month to look for updates or changes.

2. **Indexing :**
   i. In this stage, the crawler creates the index of the search engine. The index is like a huge book which contains a copy of each web page found by the crawler.
   ii. If any webpage changes the crawler updates the book with new content.
   iii. So, the index comprises URL of different webpages visited by the crawler and contains the information collected by the crawler.
   iv. This information is used by search engines to provide the relevant answers to users for their queries. If a page is not added to the index it will not be available to the users.

3. **Retrieval :**
   i. This is the final stage in which the search engine provides the most useful and relevant answers in a particular order.
   ii. Search engines use algorithms to improve the search results so that only genuine information could reach to the users.
   iii. It shifts through the pages recorded in the index and shows those webpages on the first page of results that it thinks are the best.

Que 5.14. Discuss the three types of SEO techniques.

Answer

Three types of SEO techniques :

1. **On-Page SEO :**
   a. In on-page optimization SEO method, put the keyword phrase in the title tag and the meta description.
   b. Include keywords phrase inside the main content in all the webs pages.
   c. This method focuses on website content, keyword usage in titles, headings, site structures along with internal and external links.
2. **Off-page optimization :** In this digital marketing method, perform a specific task outside the web-pages to increase the search engine position.
3. **Technical SEO :**

a. Technical SEO is a method of optimizing the website for the crawling and indexing phase.
b. It is known as technical because it does not concern the actual content of the website or with the part of the website.

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c. The main aim of technical SEO is to optimize the infrastructure of a website.

d. Famous online shopping portals like Amazon, Alibaba use this method to get the highest search engine ranking.

Que 5.15. Describe on-page optimization.

Answer

On-page optimization : Refer Q. 5.14, Page 5–13J, Unit-5.

Task of on-page SEO :

i. **Title and meta tags :**
   1. Titles and meta descriptions must be unique for each page.
   2. The length should be 50 - 65 characters.
   3. The description tag should not contain more than 160 characters.
   4. It should naturally include keywords.

ii. **Anchor text :**
   1. All links made by using anchor text.
   2. Put a title on anchor text.
   3. Use broad keywords as anchor text.
   4. Never used exact keywords as anchor text.

iii. **Image optimization :**
   1. Image filename should be descriptive. We can use keywords in filename.
   2. All images must have an alt tag. We can use keyword in the image alt tag.
   3. Do not use a large-size image.

iv. **Internal linking :**
   1. Create internal links using anchor text.
   2. Link all important pages to the home page.
   3. Include two to five internal links per page.

v. **Content optimization :**
   1. Content on the web site should be fresh and unique.
   2. Content needs to be written in small paragraphs and use H3, H4, and bold, italics style appropriately.
   3. Proper inclusion of primary and secondary keywords.
   4. Length on the content should not be too large or too small.

vi. **XML sitemap :**
   1. Create XML sitemap.

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2. Mention all public URLs inside the sitemap.
3. Include XML sitemap in the root folder of the site.

vii. Robots.txt :

1. Create robots.txt file to authenticate and stop crawler from crawling anything apart from the home page.

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1 UNIT

Introduction (2 Marks Questions)

1.1. Define website. How website is different from web page ?

Ans: **Website :** A site or website is a central location of web pages that are related and accessed by visiting the home page of the website using a browser.

Difference : A website refers to a central location that contains more than one web page or a series of webpages. For example, https://aktu.ac.in is considered a website, which contains thousands of different web pages.

1.2. What are the principles for developing a website ?

Ans: **Principles for developing a website :**

1. Simple
2. Consistency
3. Typography and readability
4. Mobile compatibility
5 Color palette and imagery

1.3. Define domain.

Ans: A domain is a name that identifies IP addresses on the Internet. A domain is the address of the website. It is used to identify web pages. We can register a domain name by registering with a domain name services registrar.

1.4. What is web hosting ?

Ans: Web hosting is a service that allows organizations and individuals to post a website or web page onto the Internet. A web host, or web hosting service provider, is a business that provides the technologies and services needed for the website or webpage to be viewed in the Internet.

1.5. What do you mean by responsive web design ?

Ans: Responsive web design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge a website to make it look good on all devices (desktops, tablets, and phones).Responsive web design is the practice of building a website suitable to work on

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every device and every screen size, no matter how large or small, mobile or desktop.

1.6. Define static website.

Ans. In static websites, web pages are returned by the server which are prebuilt source code files built using simple languages such as HTML, CSS or JavaScript. There is no processing of content on the server (according to the user) in static websites.

1.7. Define dynamic website.

Ans. In dynamic websites, web pages are returned by the server which are processed during runtime means they are not prebuilt but they are built during runtime according to the user's demand with the help of server-side scripting languages such as PHP, Node.js, ASP.NET and many more supported by the server.

1.8. What do you mean by web standards ?

Ans. Web standards are rules and guidelines established by the World Wide Web Consortium (W3C) developed to promote consistency in the design code which makes up a web page.

1.9. Define HTML.

Ans. HTML is a markup language used to create web pages. A markup language provides a way to describe the structure of text and graphics on a web page.

1.10. What do you mean by elements and attributes in context to HTML ?

Ans. **Elements :** Elements are the building blocks of an HTML document. A browser interprets an HTML document on the basis of the elements that are added in the document.
Attributes : Attributes are used to provide additional information about the properties and behaviour of HTML elements.

1.11. What is DOCTYPE element ?

Ans. The DOCTYPE element provides the Document Type Definition declaration, or called DOCTYPE declaration, for browsers to specify which version of the markup language is used in the HTML document.

1.12. Define markup tags.

Ans. A markup tag is a directive that contains snippet of code with a relative reference to an object such as a variable, URL, image, or block. Markup tags can be used anywhere, the editor is available and incorporated into the HTML of E-mail and newsletter templates, as well as other types of content.

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1.13. Why headings are important in HTML ?

Ans: Importance of headings in HTML :

1. HTML headings provide valuable information by highlighting important topics and the structure of the document.
2. In search engines, such as Google, headings are used to index the structure and content of the web pages.

1.14. What is tag ?

Ans: The tag in HTML defines a paragraph. These have both opening and closing tag. So, anything mentioned within and is treated as a paragraph.

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2 UNIT

Elements of HTML (2 Marks Questions)

2.1. Define elements is HTML.

Ans: Elements are the building blocks of an HTML document. The browser interprets an HTML document on the basis of the element types that are added in the document.

2.2. What are the types of HTML elements ?

Ans: **Types of HTML elements are :**

i. Root
ii. Metadata
iii. Section
iv. Heading
v. Flow
vi. Phrasing
vii. Embedded
viii. Interactive

2.3. Define root and flow elements.

Ans: **Root elements :** Root elements represent the main or the starting element that should be present in all HTML document.
Flow elements : Flow elements are used in the body of HTML documents or applications.

2.4. Define embedded elements and metadata elements.

Ans: **Embedded elements :** Embedded elements are used to import content from other sources into the HTML document.
Metadata elements : The metadata elements are used to set the presentation or behaviour of the remaining content of a document.

2.5. What is TITLE element, COMMAND element ?

Ans: **TITLE element :** The TITLE element contains the title of the HTML document, which appears in the title bar of the Web browser.
COMMAND element : The COMMAND element is used to execute a command when an event is fired by a form control, such as radio button or checkbox.

2.6. What is LINK element, META element ?

Ans: **The LINK element :** The LINK element is used to link an HTML document to other HTML documents. It also defines the relationship between two different HTML documents.

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The META element : The META element is used to provide information about an HTML document, such as page description and keywords.

2.7. Define section elements ? List down the section elements.

Ans: **Section elements :** The section elements are used to define the scope of headers, footers and various other sections of an HTML document.

Types of section element :

1. The BODY element
2. The SECTION element
3. The NAV element
4. The ARTICLE element
5. The ASIDE element
6. The HEADER element
7. The FOOTER element
8. The ADDRESS element

2.8. Define HTML tags.

Ans: Tags are instructions that are embedded directly into the text of the document. An HTML tag is a signal to a browser that it should do something other than just throw text up on the screen.

2.9. Define paired and singular tags.

Ans: **Paired tags :** A tag is said to be a paired tag if it, along with a companion tag, flanks the text. For example, the <B> tag is a paired tag.

Singular tags : The singular (stand-alone) tag does not have a companion tag. For example <BR> tag will insert a line break.

2.10. Why mark element, strong element, code element, small element are used ?

Ans: **Mark element :** The mark element is used to mark or highlight the text in an HTML document for reference purposes.

Strong element : The strong element is used to emphasize important text.

Code element : The code element is used to represent the computer code in an HTML document.

Small element : The small element is used to display the text as a side comment or in small print. The small prints include disclaimers, legal restrictions, and copyrights.

2.11. Define ordered list.

Ans: Ordered lists have elements that are preceded by numbers or letters. They are meant to provide a sequence of ordered steps for an activity.

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2.12. Define unordered list, definition list.

Ans. **Unordered (Bulleted) Lists :** Unordered lists use bullets before each list item. Bulleted lists are generally used when providing a list of non-sequential items.

Definition Lists : Definition lists are slightly more complex than the other two types of lists because they have two elements for each item *i.e.*, a term and a definition. The implementation is simpler than that of the other two lists.

2.13. Define cell spacing and cell padding.

Ans. **Cell spacing :** Cell spacing is the space between cells. Cell spacing is controlled with the cell spacing attribute and can be specified in pixels or percentages.

Cell padding : Cell padding is the space between the cell border and its contents. Cell padding is controlled with the cellpadding attribute. As with cell spacing, we can specify padding in pixels or a percentage.

2.14. What are inline frames ?

Ans. Inline frames were conceived as a method to enable smaller pieces of content to be incorporated in scrollable containers within a larger document. Inline frames are accomplished with the <iframe> tag.

2.15. Define hyperlink.

Ans. A hyperlink interconnects the current web page with the other web pages available on the Internet. In HTML, we can create a hyperlink by using the anchor element (A). The hyperlink redirects the user to another HTML page, image, or file.

2.16. What are different types of image formats in web pages ?

Ans. **Different types of image formats in web pages :**

1. The GIF image format
2. The JPEG image format
3. The PNG image format

2.17. Define GIF and JPEG image format.

Ans. **The GIF image format :** GIF files are used for web graphics. GIF files are small in size and are portable.

The JPEG image format : JPEG supports unlimited number of colors and has .jpeg or .jpg extension. JPEG uses a complex compression algorithm, known as the JPEG algorithm.

2.18. What are commonly used audio file formats ?

Ans. **Commonly used audio file formats :**

i. AI file format
ii. Acc file format

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iii. Au file format
iv. M3U file format

2.19. Define AIFF, AAC, M3U format.

Ans: Audio Interchange File Format (AIFF) :

1. It refers to an audio file format to store high quality and multichannel sampled audio data.
2. This format is mostly used for storing audio data for personal computers and other electronic audio devices.

Advanced Audio Coding (AAC) File Format :

1. AAC offers lossy audio compression, encoding scheme for digital audio, and several performance improvements, such as higher coding efficiency, better handling of frequencies above 16 kHz, and indistinguishable quality from the original audio source.

Media Playlist File Format (M3U) :

1. It refers to a file format that is used to store multimedia playlists.
2. It is supported by applications, such as Window Media Player and RealPlayer.

2.20. Define commonly used video file formats.

Ans: Commonly used video file formats :

i. AVI file format
ii. MPEG video file format
iii. QT file format
iv. WMV file format

2.21. Define AVI, WMV file format.

Ans: Audio Video Interleave (AVI) file format : AVI files contain both audio and video data; thereby, allowing synchronous audio-with-video playback. The AVI file format is named as video for Windows. The file extension for the AVI file is .avi.

Windows Media Video (WMV) file format : It offers video data compression technology. WMV's are designed to handle all types of video content. The file extension for the WMV file is .wmv.

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3 UNIT

Concepts of CSS (2 Marks Questions)

3.1. Define CSS.

Ans: Cascading Style Sheet (CSS) is a language designed for describing the appearance of documents written in a markup language such as HTML. CSS can control the color of text, the style of fonts, the spacing between paragraphs, column sizing background images or colors used, and a variety of other visual effects.

3.2. Write down the advantages of CSS.

Ans: **Advantages of CSS :**

1. Style sheet allow content to be optimized for more than one type of device.
2. Style sheet is downloaded more quickly because web documents using CSS commonly consume less bandwidth.
3. Users of a website can compose style sheets of their own, a feature that makes websites more accessible.

3.3. What are the ways to insert CSS.

Ans: **Three ways to insert CSS :**

1. External CSS
2. Internal CSS
3. Inline CSS

3.4. Define external, internal and inline CSS.

Ans: **External CSS :**

i. External style sheet can change the look of an entire website by changing just one file.

ii. Each HTML page includes a reference to the external style sheet file inside the <link> element, inside the head section.

Internal CSS :

i. An internal style sheet is used if one single HTML page has a unique style.

ii. The internal style is defined inside the <style> element, inside the head section.

Inline CSS :

i. An inline style is used to apply a unique style for a single element.

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ii. To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.

3.5. What do you mean by background of a web page ?

Ans: Background of a web page is the area on which the content of the web page, such as text, tables, border and images is displayed. A web page should have a background that expresses the motto of the web page.

3.6. Write down the properties to set background of a web page.

Ans: **Properties to set background of a web page :**

1. The background-color property
2. The background-image property
3. The background-repeat property
4. The background-attachment property
5. The background-position property

3.7. Define background-color property.

Ans: The background-color property is used to set the color of the background area on which an element is displayed. It can be applied to almost any element. The background-color property takes any of the following three values :

a. Color name
b. Hexadecimal equivalence of the color
c. RGB color value

3.8. Define background-spacing property.

Ans: The background-spacing property is used to specify the distance between the images that are repeated in the background of an element. It takes the value to specify the horizontal and vertical space, related to the coordinates specified by the background-position property.

3.9. Define background-attachment property.

Ans: The background-attachment property property is used to fix or scroll the background image along with the text and other content displayed on it. This property takes either of the two values : fixed or scroll. If the value is set to fixed, the background image does not move with the text when the web page is scrolled. If the value is set to scroll, the background image scrolls along with the text written over it.

3.10. Define font.

Ans: Font represents the style and size of the text that is displayed in a web browser. Fonts are also used to help users discriminate between different types of information.

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3.11. What are different font families ?

Ans: Different font families :

1. Serif
2. Sans-serif
3. Cursive
4. Fantasy
5. Monospace

3.12. Write down the different font properties in CSS.

Ans: Different font properties in CSS :

1. The font-family property.
2. The font-size property.

3.13. Define font-size property.

Ans: The font-size property is used to change the size of the text. The value of the font-size property is often specified in pixels.

3.14. Define web font.

Ans: Web font is a feature that allows to write text in fonts other than those existing in the system.

3.15. What is list-style-type property ?

Ans: The list-style-type property is used to modify the default appearance of list markers in HTML list structure.

3.16. Write down various list type properties.

Ans: Various list style properties :

1. The list-style-image property
2. The list-style-position property
3. The list-style shorthand property

3.17. Define table-layout property.

Ans: The table-layout property specifies the way in which a table should be displayed in a web browser. In CSS, the table-layout property allows flexibility in positioning the tables, which means that we can easily move and place tables at different location throughout the web page.

3.18. Define box model.

Ans: CSS converts the data of HTML elements in the form rectangular boxes, by using a layout model, called the box model, to set the design and layout of HTML documents. This means that the box model determines how HTML elements are displayed as boxes. The box model allows placing a border around the elements and also provides space between elements.

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3.19. Define margin and margin property.

Ans:

1. The blank area around the border of an element is called margin. It is used to create an extra space around an element. It is completely transparent and does not contain any background color.
2. Margin is also used to determine the spacing around different elements.
3. The margin property is used to set all the sides of an element, such as top, right, bottom, and left.

3.20. What is fixed positioning ?

Ans: The fixed value of the position property is used to set the fixed position for an element. It keeps an element fixed with respect to the remaining content of the web page.

3.21. What is relative positioning ?

Ans: The relative value of the position property is used to set the relative position of an element with respect to the content of its parent element.

3.22. What is absolute positioning ?

Ans: The absolute value of the position property is used to set the absolute position of an element with respect to the content of its parent element.

3.23. Define pseudo-classes.

Ans: Pseudo-classes are predefined classes that enable us to apply certain styling rule on specific states of an element. These classes allow us to style visited or unvisited links, or to specify how the links are rendered in response to user actions.

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4 UNIT

Introduction to Client Side Scripting (2 Marks Questions)

4.1. Define client-side scripting.

Ans: Client-side scripting refers to the programs that are executed on client-side. Client-side script contains the instruction for the browser to be executed in response to certain user's action. Client-side scripting programs can be embedded into HTML files or also can be kept as separate files.

4.2. What are commonly used client-side scripting languages ?

Ans: Commonly used client-side scripting languages :

1. JavaScript
2. ActionScript
3. Dart
4. VBScript

4.3. What is JavaScript ?

Ans: JavaScript is an open source and most popular client-side scripting language supported by all browsers. JavaScript is used for enhancing the interaction of a user with the web page.

4.4. Write down the advantages of JavaScript.

Ans: Advantages of JavaScript :

1. It show dynamic content based on the user profile.
2. It react to user's operations, like mouse clicks events, key presses or pointer movements.
3. It support features like auto-validated form entries and interactive drop.

4.5. Write down the type of datatypes in JavaScript.

Ans: Folowing are the datatypes in JavaScript :

1. Primitive datatype
2. Non-primitive (reference) datatype

4.6. What are JavaScript variable ?

Ans: A JavaScript variable is a name of storage location. There are two types of variables in JavaScript :

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Local variable : A JavaScript local variable is declared inside block or function. It is accessible within the function or block only.
Global variable : A JavaScript global variable is accessible from any function. A variable *i.e.*, declared outside the function or declared with window object is known as global variable.

4.7. What are the different operators in JavaScript ?

Ans: **Types of operators in JavaScript :**
1. JavaScript arithmetic operators
2. JavaScript comparison operators
3. JavaScript bitwise operators
4. JavaScript logical operators

4.8. Define arithmetic operator is JS.

Ans: Arithmetic operators are used to perform arithmetic operations on the operands. The following operators are known as JavaScript arithmetic operators :
1. Addition (+)
2. Subtraction (–)
3. Mutliplication (*)

4.9. What are conditional statements ?

Ans: Conditional statements are used to perform different actions based on different conditions. In JavaScript we have following conditional statements :
1. The if statement
2. The else statement
3. The else if statement
4. The switch statement

4.10. Write down the four types of loops in JS.

Ans: There are four types of loops in JavaScript :
1. JavaScript for loop
2. JavaScript while loop
3. JavaScript do while loop
4. JavaScript for in loop

4.11. Define JavaScript do while loop.

Ans: The JavaScript do while loop iterates the elements for the infinite number of times like while loop. But, code is executed at least once whether condition is true or false. The syntax of do while loop is :

```
do{
  code to be executed
}while (condition);
```

4.12. Define the three kinds of popup boxes.

Ans: JavaScript has three kinds of popup boxes :

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1. Alert box
2. Confirm box
3. Prompt box

4.13. What is alert box ?

Ans An alert box is used if we want to make sure that information comes through authenticated user.

4.14. Define prompt box.

Ans A prompt box is used if we want the user to input a value before entering a page.

4.15. Define some JavaScript events.

Ans There are some JavaScript events :

1. onclick event
2. onkeyup event
3. onfocus event
4. onblur event

4.16. What is onkeyup event ?

Ans Onkeyup event is a keyboard event and executes instructions whenever a key is released after pressing.

4.17. Define array.

Ans JavaScript array is an object that represents a collection of similar type of elements. There are three ways to construct array in JavaScript :

1. JavaScript array literal
2. JavaScript array directly (new keyword)
3. JavaScript array constructor (new keyword)

4.18. Define JavaScript object.

Ans A JavaScript object is an entity having state and behaviour (properties and method). JavaScript is an object-based language. Everything is an object in JavaScript.

4.19. Write down the three ways to create objects in JavaScript.

Ans **Following are three ways to create objects :**

1. JavaScript object by object literal
2. By creating instance of object
3. By using an object constructor

4.20. What are the two functions of form validation ?

Ans **Form validation generally performs two functions :**

1. **Basic validation :** The form must be checked to make sure all the mandatory fields are filled in. It would require just a loop through each field in the form and check for data.

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2. **Data format validation :** The data that is entered must be checked for correct form and value. The code must include appropriate logic to test correctness of data.

4.21. What are the two advantages of JavaScript functions ?

Ans: There are mainly two advantages of JavaScript functions :

1. **Code reusability :** We can call a function several times so it saves coding.
2. **Less coding :** It makes our program compact. We do not need to write many lines of code each time to perform a common task.

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5 UNIT

Web Hosting and Concepts of SEO (2 Marks Questions)

5.1. Define web hosting.

Ans. Web hosting is a service that allows organizations and individuals to post a website or web page onto the Internet. A web host, or web hosting service provider, is a business that provides the technologies and services needed for the website or web page to be viewed in the Internet.

5.2. What are different web hosting platforms ?

Ans. **Different web hosting platforms :**

1. Windows hosting servers
2. Linux hosting servers

5.3. Write down the type of web hosting services.

Ans. **Types of web hosting services :**

1. Website builders
2. Shared hosting
3. Dedicated hosting
4. Collocated hosting
5. Managed hosting

5.4. Define website builder service.

Ans. Website builder service is a type of hosting service that caters to beginners who need to host a website, but lack the technical skills and knowledge to build one.

5.5. Why domain name is important ?

Ans. **Importance of domain name :**

1. It is the first impression.
2. It affects SEO.
3. It defines the brand.

5.6. Name some domain registrar.

Ans. **Domain registrar are :**

1. GoDaddy

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2. Namecheap
3. Hover
4. Google domains

5.7. Define Namecheap.

Ans: Namecheap offers slightly better prices for domain registrations. It also offers a wider assortment of paid add-ons, like domain privacy and SSL certificates, with far more reasonable rates.

5.8. Define Name server.

Ans: Name server is a server on the Internet specialized in handling queries regarding the location of the domain name's various services. Name servers define the domain's current DNS provider.

5.9. What is control panel ?

Ans: Control panel is the centralized configuration area in Windows. It is used to make changes to nearly every aspect of the operating system. This includes keyboard and mouse function, passwords and users, network settings, power management, desktop backgrounds, sounds, hardware, program installation and removal, speech recognition, parental control, etc.

5.10. Define FTP.

Ans: File Transfer Protocol is method of transferring files over the Internet. To upload files via FTP, we will need a special program called an FTP client. FileZilla is a free and reliable FTP client.

5.11. Write the things that need to be done when maintaining a website ?

Ans: Following things needs to be done when maintaining a website :

1. Keep secure
2. Keep a regular backup schedule
3. Keep updated software
4. Keep updated content

5.12. What is SEO ?

Ans: SEO (Search Engine Optimization) is the practice of increasing the quantity and quality of traffic to the website through organic search engine results. Search Engine Optimization is the process of optimizing web pages and their content to be easily discoverable by users searching for terms relevant to the website.

5.13. Define white hat SEO.

Ans: White hat SEO refers to the SEO techniques which are in accordance with the SEO guidelines set by the search engines. It means it uses approved search engine optimization techniques to improve the ranking of a site on Search Engine Results Pages (SERP).

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5.12. Define Black hat SEO.

Ans. Black hat SEO refers to the SEO techniques which are not in accordance with the SEO guidelines set by the search engines. These techniques exploit the weaknesses in search engines to get higher rankings for websites on the Search Engine Results Pages (SERP).

5.15. Why SEO is useful ?

Ans. **SEO is useful for :**

i. Designing and developing a website that is Search Engine friendly.

ii. Optimizing the volume and quality of website traffic from search engines.

iii. Knowing how search algorithms work and what our target audiences might search.

5.16. Define on-page SEO.

Ans. In on-page optimization SEO method, we need to put the keyword phrase in the title tag and the meta description. We need to have keywords phrase included inside the main content in all the webs pages.

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